SPECIALIZED OIL JOURNALS
GULF PUBLISHING COMPANY
PRODUCING
REFINING
MARKETING

Volume 44, Number 8 *February 11, 1927*

The OIL WEEKLY

Edited Weekly at Houston, Texas SPENCER W. ROBINSON, *Editor*

Technical—Engineering—Research

OIL FROM COAL NOT NOW POSSIBLE, BUT PRACTICAL..... 33
By Ismar Ginsberg

SMALL UNITS USED ON AIR LIFT AT GOOSE CREEK..... 36
By George Reid

SOME SPECULATION ON WHAT GOES ON INSIDE A SEPARATOR..... 38
By Alexander B. Morris

RESEARCH REVEALS VALUABLE FACTS ABOUT CONCRETE..... 41
By Claude C. Brown

NEW EQUIPMENT, CATALOGS, ETC., OF INTEREST TO PRODUCERS..... 83

Markets—Statistics—Economics

PRODUCTION GAIN ENDANGERS CRUDE MARKET STRUCTURE..... 23
By Kent Ridley

CRUDE OIL PRICE QUOTATIONS FOR ALL U. S. FIELDS..... 52

IMPORTS AND RECEIPTS OF CALIFORNIA OIL AT ATLANTIC PORTS..... 54

DAILY AVERAGE PRODUCTION FOR ALL U. S. FIELDS..... 56

News—Editorials—Features

EDITORIAL COMMENT 24

MARLAND BILL STRONGLY OPPOSED IN COMMITTEE REPORT..... 26

THE TEXAS COMPANY PAYS OVER TWO MILLION FOR 320 ACRE PRODUCING LEASE IN BROWN COUNTY.... 37

LETTERS OF PAUL PEEBLES, P. S. G..... 86

"SQUEAKS" FROM THE BULL WHEEL..... 88

Field Development—Exploration

ARTIFICIAL FLOWING KEEPS PRODUCTION RISING..... 25
By Roye Munsell

McCAMEY-HURDLE DISTRICT CROWDING HANDLING FACILITIES..... 27
By H. H. King

LOUISIANA COAST RALLIES WITH NEW DOME STRIKES..... 28
By Wallace Davis

SABINE PARISH WILDCAT BELIEVED NEW FIELD OPENER..... 29
Staff Representative

MORE ACTIVITY AND LESS OIL AT HUNTINGTON BEACH..... 30
By Wm. V. Gross

TEXAS PANHANDLE OPERATIONS SHOW BIG INCREASE..... 31

RACCOON BEND, NEW AUSTIN COUNTY PROVEN AREA WILL HAVE EXTENSIVE PLAY IMMEDIATELY..... 46

COMPLETIONS IN ALL U. S. FILEDS FOR THE PAST WEEK..... 59

WILDCAT DRILLING REPORT FROM ALL SECTIONS..... 66

PERMITS GRANTED FOR NEW WELLS DURING THE PAST WEEK..... 75

Published Weekly by GULF PUBLISHING COMPANY
Copyrighted, 1927

R. L. DUDLEY, *President* — A. L. BURNS, *General Manager* — SPENCER W. ROBINSON, *Editorial Director* — J. KENT RIDLEY, *Managing Editor*

Office of Publication: 1716 Dallas Avenue, Houston, Texas.

NEW YORK: Room 832, 250 Park Avenue, R. P. Swinsky, Manager. PITTSBURGH: 2201 First National Bank Bldg., W. W. Pigue, Manager. CHICAGO: 476 First National Bank Bldg., O. R. Waller, Manager. LOS ANGELES: 1201 Haas Bldg., Wm. V. Gross, Manager. TULSA: 214-218 Atco Bldg., J. F. Carter, Jr., Manager. FORT WORTH: 203 W. T. Waggoner Bldg., H. H. King, Manager. Issued Friday of each week. Single copies 10 cents. Subscription price, Domestic $1.00 a year, Foreign $2.00 a year. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

"OILWELL" Rotary Fish Tail Bits

"OILWELL" Fish Tail Bits will drill more hole with less expense to the contractor than other high priced rotary bits. They are made of a special alloy steel and heat treated. The forging, machining, and heat treating are done by experienced mechanics, under our supervision, and in our own plant. These bits are easily dressed and tempered in any oil field bit shop.

Inquire at Any of Our 100 Branches

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Production Gain Endangers Crude Market Structure

Pessimism felt among Oklahoma producers because of Seminole flood, but in Texas premiums are required to secure crude

By KENT RIDLEY

MARKET conditions in the Mid-Continent area are as widely different as are the principal producing centers. In Oklahoma where the Seminole area is now expected to reach 300,000 barrels daily in spite of "the head being off," the tendency is to pessimism and operators are expecting a reduction in the posted price during the month. The feeling is that the market cannot withstand the flood of oil.

On the other hand, North, West and Panhandle, Texas, report more strength and higher premium offers, and one of the most important production transactions in some time. Premium offers for low-posted Panhandle crude are being met with indifference in some quarters and operators are moving to store their production against the increased price which is expected co-incident with the completion of pipe lines to the area.

The refined market continues slow and unfavorable. Movement of domestic gasoline and prices below value based on crude costs is sluggish, and exporters are idle. Fuel oil is the only commodity leaving the refineries at attractive price, and for the time being is bearing the refiners' burden.

New Production Peak

Due to a 30,600 barrel gain in daily average at Seminole for the week ending February 5, together with increases in Brown, Crane and Upton Counties of West Texas amounting to 11,650 barrels, the total daily average production for United States fields reached a new high level with 2,402,400 barrels. Seminole pool made a daily yield of 226,000 barrels for the week against 195,400 barrels for the previous week. Aside from these phenomenal rises in output the tendency over the rest of the country generally was toward minor slumps. The Rocky Mountain area was down 3700 barrels for the week as a result of a drop in Salt Creek field, 47,200 to 42,000 barrels. This loss was partially checked by a 1000 barrel increase at Rattlesnake field, New Mexico. The Gulf Coast region was down 1100, Arkansas 1050, California 900, Eastern States 500, North Louisiana 100, and Kansas 250 barrels.

Oklahoma Uneasy

Predictions are numerous throughout Oklahoma that the price structure on Mid-Continent oils will not hold through February.

These opinions are based on the sudden jump in production in the greater Seminole area. Sunday the field gauged 449,000 barrels. Tuesday the production was 278,462 barrels and reports are that 300,000 barrels daily may be expected as the ultimate peak.

Few believe that the Mid-Continent price structure can withstand a production of this magnitude. Financial circles, too, are fearful of the situation, as indicated by rumors last week that crude prices would be cut.

Production at Seminole is well in hand at this time. The rated pipe line capacity out of the pool is 299,000 barrels daily. This is divided as follows:

Oklahoma Pipe Line Company	50,000
Prairie Pipe Line Company	50,000
Sinclair Pipe Line Company	49,000
Gulf Pipe Line Company	30,000
Magnolia Pipe Line Company	25,000
Ozark Pipe Line Company	25,000
Texas Pipe Line Company	18,000
Amerada Petroleum Corporation	15,000
Empire Pipe Line Company	12,000
Mid-Continent Petroleum Corporation	12,000
Shaffer Oil & Refining Company	5,000
Tidal Refining Company	5,000
Independent Oil & Gas Company	4,000

These totals are of capacities only and have no direct bearing on runs from the field. Actual runs are above 225,000 barrels daily and likely will be boosted to 250,000 barrels daily this week.

In addition to these existing lines, the Oklahoma Pipe Line Company has announced the construction of a 10-inch trunk line from the field to a point near Muskogee. This can be completed in 45 days, with favorable weather. It should be in operation at the end of 60 days at least.

The Seminole area has 2,000,000 barrels of enipty steel storage to take care of the excess of production above pipe line runs.

Panhandle More Firm

The crude market in the Texas Panhandle district has a firmer tone than any other high gravity oil producing area in the greater Mid-Continent, and larger premiums above the posted price are being obtained by independent producers and crude brokers for Hutchinson County crude than in any other field. Hutchinson County is the principal source of crude supply for independent buyers in the Panhandle for tank car movement from the field. A uniform posted price of $1.25 per barrel prevails on Hutchinson County crude, but buyers seeking spot purchases or contracts for future delivery, encounter difficulty in covering on their requirements at $1.55 per barrel. Some producers have withdrawn pipe line connections with major buyers, and are filling all available tankage to hold out for a price increase that is believed to be in store for the field with the completion of the first direct pipe line outlets to distant refining centers.

The confidence displayed by Hutchinson County producers in the next move of crude prices in the district by demanding big premiums has resulted in a sharp drop in tank car movement of oil from the field, as illustrated by

DETAILS ON CRITICAL FIELDS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	No. Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
PANHANDLE—								
Hutchinson County	757	435,645	575	735	111,395	152	69	164
Gray County	102	29,425	288	99	8,445	85	11	40
Carson County	77	26,015	338	69	5,670	82	20	45
Wheeler County	17	5,950	350	13	1,750	135	4	18
Total	953	497,035	522	916	127,260	139	104	267
OKLAHOMA—								
Greater Seminole ar'a	225	316,908	1,452	218	249,600	1,142	97	430
CALIFORNIA—								
Huntington Beach Townsite & Barley Patch	163	128,503	788	134	53,475	398	19	100
Ventura	83	162,232	1,954	77	51,750	672	7	17
Seal Beach	8	18,260	2,282	6	11,790	1,965	12	25

the latest tank car shipment report. During the week ending January 26, approximately 2065 cars of crude were loaded and moved to refining centers in the Mid-Continent and Gulf Coast. This represents a drop of 795 cars below the movement during the preceding week, while normal tank car movement during December amounted to about 3000 cars weekly.

Although the current low prices on gasoline do not allow a margin of profit to take care of a premium for crude above regular Mid-Continent gravity scale prices, the independent refiners in the North Texas district are paying an average of 10 cents per barrel for spot oil in Wichita, Archer and Young Counties, and some plants with limited credit arrangements are bidding higher bonuses for their crude requirements.

Correct Brown County Situation

Texas, Sinclair and Prairie have taken steps to correct the local overproduction situation that has developed within the past several weeks in western Brown County, Texas, where the Fry field and nearby points have contributed flowing wells of 1000 barrels of 43-44 gravity oil initial in rapid succession. This high gravity oil area is doing about 20,000 barrels daily from 100 pumping and flowing wells. The Texas Company has contracted to purchase subject to title examination the R. M. Lowe 320-acre lease of the Geo. A. Henshaw & Company in the Fry field with 14 wells making about 6000 barrels daily for a consideration around $2,000,000. The managmeent of the property has changed hands, and The Texas Pipe Line Company has started work on doubling its four-inch line into the area, having previously had a single line with four-inch loops about half way. Sinclair is building into the field to take care of the production of the Sinclair Oil & Gas Company, since the latter has been forced to hold back production for lack of tankage and pipe line connections.

The Church & Fields area in northeastern Crane County, West Texas district, is facing a proration of crude runs if producers continue to boost their production. This area was credited last week with having scored a 1850 barrel producer on the south end of the field, and a drilling spree has broken out on nearby leases on the strength of this flush producer. Humble is at present trying to serve all the producers with a six-inch carrier extending south to the Hurdle district, where Humble's trunk line and car racks are moving the oil eastward. Humble's Church & Fields line is also handling about 8000 barrels daily on contract for Gulf from the McElroy leases, located south of the Church & Fields area, and is running the maximum capacity of the line. Humble is reported to have given verbal notice to operators to "go easy" on drilling in new producers, else proration of runs will be necessary.

Church & Fields Area

Magnolia Petroleum Company is reported to be planning a crude gathering system and tank farm to serve the Church & Fields area, and will erect the tankage on the Texas Pacific railroad between Odessa and Midland, but this additional crude outlet would not be available for several months at the earliest. This move by Magnolia will be the first step towards building a trunk line system to West Texas, as it is Magnolia's policy to invade new flush areas with a large steel tank farm, then build to the field with a line when crude stocks and daily production and purchases justify. Such being true at Luling, Smackover, Bull Bayou, Mirando and more recently the Texas Panhandle.

EDITORIAL COMMENT

A NOTABLE gathering of technical men is scheduled for February 15 to 17, when the Petroleum Division of the American Institute of Mining and Metallurgical Engineers convenes at New York.

The meeting is notable both for the wide coverage of pertinent subjects and the number and weight of the engineers, geologists and economists who have been assigned subjects upon the program, and also for a variation of the usual technical gathering, in that many of the papers to be presented have been submitted in advance and will be the subject of free discussions in symposium meetings arranged for groups.

That this session will result in advancement of the industry is easy to concede. Many of the world's most learned petroleum technologists will be in attendance and their discussions will be open to all engineers and oil men. Men who as individuals and as members of company organizations have conducted independent experiments and investigations of problems to be overcome in oil recovery and conservation, will trade their experiences in the group meetings. These discussions will constitute a review of what has been accomplished in the several lines of research now engaging the attention of the industry, and will form a basis for further progress along those lines.

Among the important papers are those to be presented on the first day in the Petroleum Economics Symposium, including "Relation of Petroleum to Industry", in which the principles of conservation are discussed, and for the first time papers on the economics of natural gas gasoline, lubricating oils and the tanker situation will be considered.

The refining symposium scheduled for February 16, will cover the refining of cracked gasoline, recent fractionation developments and refining of lubricants, and the first presentation of automatic control refining operations.

The production engineering symposium will include new aspects of gas-lift, transmission of hot oils and other timely subjects.

February 17 ten new papers on corrosion problems with written discussions by foremost American and English experts. On the same date the production symposium will include 15 papers covering the entire world oil outlook.

The final general session the night of February 17 will cover advances in production and technology, including discussion by engineers of the status of technical knowledge as a basis for regulation of gas production with oil by state legislation.

Most of the 14 sessions arranged for the meeting will include round table discussions of petroleum engineering, research and engineering discussion of instead of reading prepared papers.

Artificial Flowing Keeps Seminole Production Rising

Fire destroys rig on Oklahoma Panhandle producer where producing formation is said to be similar to Texas

By ROYE MEUNSELL
Staff Representative

Tulsa.—Total production from the greater Seminole field for the 24 hours ending at 7 a. m. Tuesday was 278,462 barrels, of this amount the Seminole City pool proper produced 221,868 barrels from 191 producing wells.

The Searight sector contribued 10,090 barrels with two wells, and Earlsboro 17,818.

This increase from Earlsboro is due to the addition of a producing well there over the week end. The new well, the Amerada Petroleum Corporation Anderson No. 2 in section 15-9-5 is flowing at the rate of 480 barresl an hour. It has continually increased its production since striking the Wilcox pay.

Increase at Seminole City proper is very largely from older wells and small flowing new wells being boosted by the gas and air lifts. Some idea of the effect which the air and gas lift is having on the production from the field can be gotten from the fact that the Seminole City pool proper was producing some 200,000 when the entire field was making around 250,000 barrels, and this with the "head" off. Large flush producers that characterized the early development of that section are now very much the exception with non-flowing wells the rule. The small amount of gas that was found associated with the oil in the pay sand was soon dissipated by the original large flush producers.

Plenty Handling Facilities

In the event that the field reaches a peak of 300,000 barrels, as it is expected by some to do, no trouble in caring for the oil is to be anticipated. A survey of the facilities of the field shows that with the present pipe line capacity and available storage, 300,000 barrels can be handled until new lines and storage now under construction are completed.

The development in the field during the past week was without any significant extensions. Exploitation was a matter of more or less routine operation.

An important development in Oklahoma during the latter part of the week was the addition of a large flush producer in the Oakhurst pool, in Tulsa County, by Savoy Oil Company and Munn Brothers. Their new well, the Day No. 11 in the southwest of the northeast of 6-18-12, picked up the Turkey Mountain sand at 2271 feet and two feet in started flowing at the rate of 500 barrels per hour. The produc-

MAP SHOWING LOCATION OF RAMSEY BROS.' IMPORTANT WILDCAT TEST IN THE OKLAHOMA PANHANDLE.
Location is the center of the northwest of the northeast of 27-5-5.

tion is now holding around 200 barrels per hour.

The Turkey Mountain sand is the deepest producing horizon in that district. Other production is from the Wilcox sand and the Hominy series.

The Savoy Oil Company and Munn Brothers have three wells producing from the Turkey Mountain sand. Their sceond well, which was completed about two weeks ago, is still holding up around 60 barrels an hour. Six additional wells will be drilled by the operators for further production on their tract from the Turkey Mountain sand.

Rig Over Oklahoma Panhandle Well Burns

Just as the Ramsey Brothers were getting the test of their wildcat well in Cimarron Conuty, in the Oklahoma Panhandle, well underway the rig burned down. Operations are therefore suspended until a new rig can be erected over the well. The nearest point of supply is the Panhandle field in Texas, which is 160 miles away.

Apparently someone flipped a cigarette down and before the crew could get a hose on the blaze the derrick was aflame to the top.

The well had been deepened four and a half more feet to a total depth of 4105½ feet. The hole was then nine feet in the pay. For two days the well swabbed and bailed an average of 75 barrels before deepening. When deepened production increased to 100 barrels. It was to have been given a 20 quart shot when the rig caught on fire.

Reports from the well carry the information that the pay is a conglomerate, resembling to some extent the granite wash which is productive in the Texas Panhandle.

Marland Bill Strongly Opposed In Committee Report

Oklahoma operators appoint committees to appear before legislature on both conservation and production tax

Tulsa.—Active opposition to the Marland measure, now pending befort the Oklahoma legislature, was adopted as the position of the Mid-Continent Oil & Gas Association, following a report of a committee of 15, previously appointed to make a study of the mesaure. In adopting the report of the committee, Henry McGraw, president of the Association, named another of 10 to appear before the legislative committee of the two branches of the Oklahoma legislature Wednesday in opposition to the measure.

The report of the committee of 15 is a lengthy one, which sets out many oppositions to the bill. A minority report was filed by Charles C. Brown, vice-president of the Marland Oil Company. In this he challenged several statements of the majority report, especially that part pertaining to the cost of operating the oil properties of the State under the requirements of the measure.

After stating the position of the oil industry in Oklahoma, the majority report classes the measure as "far reaching in its scope and revolutionary in effect. It prescribes a compulsory method of operating oil wells. It empowers the State to limit and control both oil and gas production.

Invades Property Rights

"It invades and overrides property rights. tI deprives the operafor ot inboth oil and gas production. It invades and overrides property rights. It deprives the operator of initiative, liberty and freedom of action, it destroys vast wealth in the form of oil wells, gasoline plants and pressure plants. It adds a half million dollars annually to the cost of producing oil. It compels the investment of sixty million dollars in additional lease equipment. It socializes the oil producing industry. In deprivation and destruction of property rights it rivals if not eclipses soviet Russia."

The body of the report goes into details on each of these points. The conclusion reads: "Your committee, therefore, concludes that this bill in principle and in all its provisions is revolutionary, drastic and dangerous, is unsound in principle and unworkable in practice. This association and the entire industry are urged to condemn the bill; vigorously oppose its passage by the legislature of Oklahoma."

Committee Named

The committee of 10 named to oppose the measure at the committee hearing in behalf of the association is composed of Wirt Franklin of Ardmore; W. E. Wood of Okmulgee; L. H. Wentz of Ponca City; W. N. Davis of Bartlesville; L. B. Jackson of Sapulpa; W. C. Franklin of Tulsa; W. P. Z. German of Tulsa; Rush Greenslade of Tulsa; C. J. Wrightsman of Tulsa and Burdette Blue of Bartlesville.

Another committee was named to represent the association at the Legislative Committee hearing next Wednesday on the bill to increase the Oklahoma gross production tax on oil from three per cent to five per cent. This committee consists of S. W. Hays, Marland Oil Company, Ponca City; H. Hill, The Texas Company, Tulsa; J. C. Denton, Mid-Continent Petroleum Corporation, Tulsa; E. H. Chandler, Sinclair Oil & Gas Company, Tulsa; W. R. Ramsey of Oklahoma City; Wirt Franklin of Ardmore; John H. Kane, Phillips Petroleum Company, Bartlesville; L. B. Jackson of Sapulpa; Louis Campbell, Magnolia Petroleum Company, Oklahoma City, and M. R. Straight, Empire Gas & Fuel Company, Bartlesville.

Noodle Creek Production From New Depth

Abilene, Texas.—A second oil producing horizon in the Noodle Creek field, Jones County, is being tested by the Marland Oil Company's Mason-Harris 2, which proved dry in the regular 2500-foot pay although offsetting two producers. This test drilled gray lime pay at 2929-31 feet while carrying considerable water from above, and will lower 6⅝-inch casing from 2698 feet and make a test of the second pay.

Mid-West Exploration Company's Thornton 2 gave the Noodle Creek field its eighth producer late last week making 375 barrels from pay at 2491-2502 and 2506-16 feet, and is being drilled deeper. The World Oil Company's A. W. Clark 1, which is being watched for a north extension to the field, is drilling ahead at 2250 feet.

Spindle Top Production

Beaumont, Texas—Spindle Top production hung around 72,160 barrels February 6, following completion of Yount-Lee's McFaddin No. 23 for 4500 barrels February 3, from 2915 feet. The daily run had dropped late last week to 67,936 barrels, after the head was off Rio Bravo's T. & N. O. No. 3, the first well to check a phenomenal slump, running from 82,000 to 66,500 barrels. The Yount-Lee well checked the new decline which had set in.

McCamey-Hurdle District Crowding Handling Facilities

Believed that proration of runs will be made rather than lower prices should drilling rush force action

By H. H. KING
Staff Representative

San Angelo, Texas.—The drilling rush being staged by lease owners in the recently developed flush oil areas in the McCamey-Hurdle district, Upton County, and the Church & Fields field, Crane County, threatens an over-production of crude. The latter district is now producing near the maximum of pipe line and storage facilities, with several new wells scheduled for completion this week, and producers have been requested by the Humble Pipe Line Company, which has the only pipe line outlet, to hold down the new production until adequate provisions can be made to handle the oil.

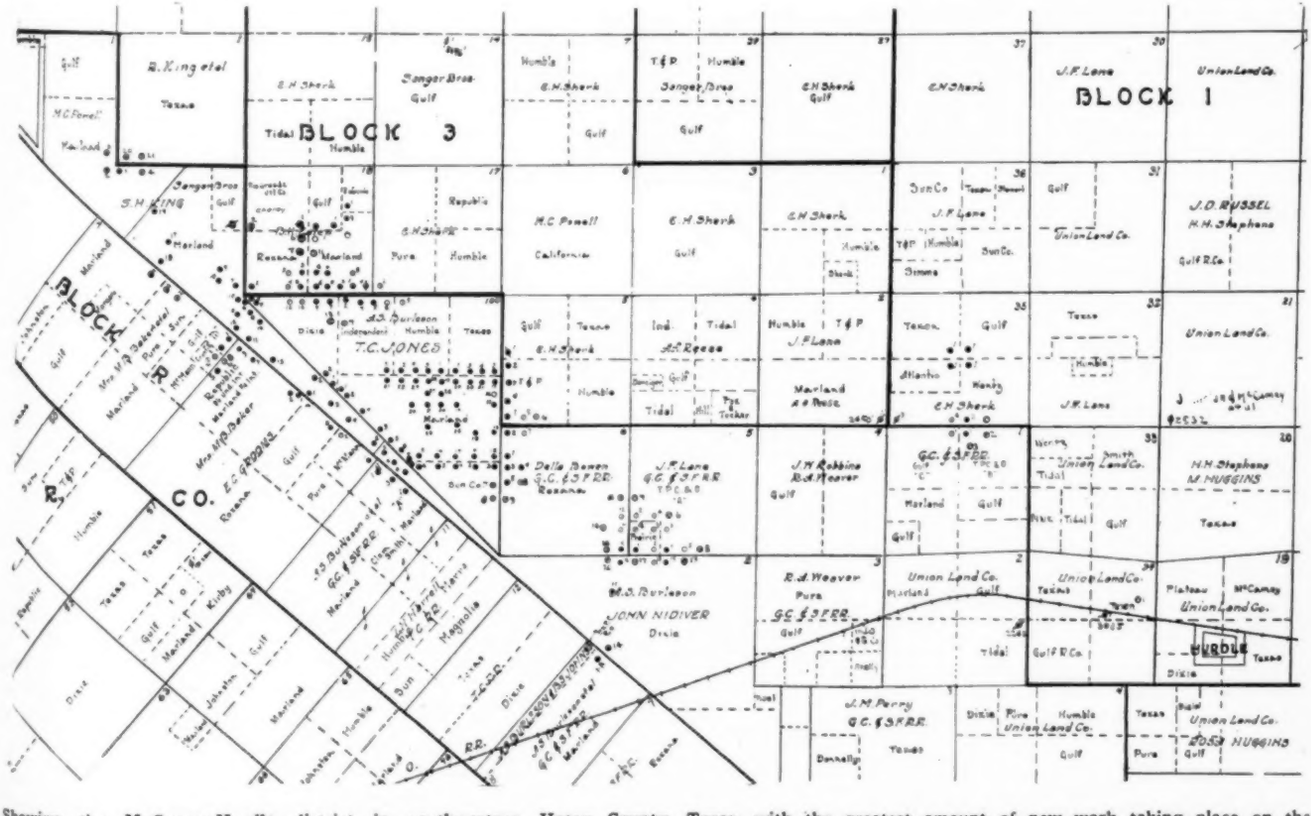
The Church & Fields area added more than a dozen locations when the joint test of Collett & O'Keefe and the Eastland Oil Company extended the field a half mile south on January 30 with a flush flow of 1850 barrels of 33.3 degrees gravity pipe line oil from regular pay at 2890-2905 feet. This well produced 1830 barrels during the 24-hour period ending February 6, and has not declined below 1800 barrels on any single day since completed. Humble is taking the oil for purchase. A northwest offset being drilled by Simms Oil Company and Atlantic Oil Producing Company is scheduled for completion late this week, if pipe line connections can be had. Magnolia scored its best well in the Church & Fields area last week when O'Keefe-University 3 flowed 435 barrels initial at 2957-67 feet, and four days later was holding at 410 barrels.

Daily production in the Church & Fields area is now above 3400 barrels from 17 wells, and most of the new drilling is in the newly discovered flush area. Humble is running this oil, besides taking 8000 barrel daily on contract from Gulf Production Company's McElroy property, located three miles to the south, with only a six-inch line to handle same, and no reserve tankage. Humble's pump station is also giving trouble, owing to the alkali water interfering with the steam boilers, and a new station equipped with engines now being built will not be ready for about 30 days. Gulf is building an eight-inch line from its McElroy property to a tank farm and car rack site near Midland, but this outlet will not be in service for at least 30 days. Gulf will have four 55,000 barrel steel tanks at the Midland rack having switched from 80's to 55's because of putting on wood roofs. The sulphur content of the crude in the Crane-Upton County district soon destroys steel roofs on tankage.

No Cut Expected

Proration of daily runs instead of cutting of crude prices is believed to be in store for the Church & Fields area, unless other buyers invade the district with lines and tankage. The prices posted for this oil is on a gravity basis, and the oil brings from $1.05 to $1.20 per barrel at the well. The nearest railroad is about 25 miles north of the field, and even though other buyers decide to serve the field an outlet would not be available for a month or more. Magnolia Petroleum Company is reported to be planning a tank farm prop-

(Continued on page 32)



Showing the McCamey-Hurdle district in southwestern Upton County, Texas, with the greatest amount of new work taking place on the southeast edge of the field, where the highest point of the structure was recently uncovered. The discovery well is on Republic's 320-acre Baker lease, Grooms survey.

Louisiana Coast Rallies With New Dome Strikes

Greatest wildcat program in history now under way; development chiefly concentrated around dome

By WALLACE DAVIS
Staff Representative

Houston.—The Louisiana Gulf Coast region is undergoing the most intensive development generally of any single period in the history of the industry. Discovery of new domes in the southern portion of the state recently have stimulated this development program and the development in turn has uncovered considerable new production. And so the cycle of operation has continued to bring drilling to such a pitch as to almost equal boom development with the exception that operations are pretty well scattered over the coastal area.

Rex Petroleum Company opened the deepest production found at Edgerly, Calcasieu Parish, when its Hunter Estate No. 4, located on the north and west side of the old field, made between 40,000,000 and 50,000,000 feet of gas and about 15 barrels of oil from a 4027-foot sand last week. Production was coming through a ¼-inch choke, which was put on the well when gas pressure became so strong Early this week the gas was reported decreasing and oil increasing. No. 4 is located 150 feet east of No. 3 on the same tract, which picked up the same sand but failed to make a producer due to difficulties in setting.

Location of the No. 4 well is in section 28, township 9 south, range 11 west. The crude is 24 gravity.

In the event of commercial pay from this well the field has a fair shot of getting further deep drilling, inasmuch as practically all of the former production has come from a level of from 2700 to 3100 feet.

Starks Dome

Starks dome, in Calcasieu Parish, about seven miles north and slightly west of Vinton, has the ear marks of one of the best producers in the Louisiana coast in the near future. The discovery well, Lutcher-Moore No. 4 of the Gulf and Standard of Louisiana, completed late in January for a 2500 barrel initial from 4042 feet, made 500 barrels when opened February 3, and increased until Monday of this week making 50 barrels an hour with over 500 pounds pressure through a ½-inch choker. No definite locations had been announced at that time, and it is the general opinion that development will be slow due to unit ownership by Gulf and Standard of around 10,000 acres over and around the dome, with little chance of competition. Two wells are now drilling at Starks dome, which were going down at the time of completion of the discovery well. Standard of Louisiana's Industrial Lumber Company No. 4 is reported on top of a sand at 1595 feet, drilling on the dome, and the No. 5 was losing returns at the close of the past week at 2357 feet in gyp.

Eagle Point

New commercial production is expected at Eagle Point in Iberia Parish with the Union Sulphur Company's No. 1 Schwing standing with a hole full of oil from a depth of 1143 feet. The well failed to flow when 65 feet of strainer was set and two-inch tubing was being run Monday in an effort to aid the flow. Six-inch casing was standing almost to the top in oil. The No. 1 Fee, discovery well of the Union Sulphur Company at Eagle Point, is making around 500 barrels. The Gulf's State Z-1, an offset to the Fee 1, and located in the waters of Lake Fausse Point, a neck of Grand Lake, was rigging up early this week. The Gulf's Broussard No. 1, located about one-half mile to the northwest of the discovery well was 3022 feet in rock late last week. The two wells that have found production are on top of the dome with oil coming from the cap rock, while Broussard No. 1 is apparently off the edge of the dome.

Sweet Lake

The Sweet Lake No. 2, completed by the Pure Oil Company in the center of Sweet Lake, Cameron Parish, two weeks ago for an 1800 barrel initial with 50,000,000 feet of gas and was shut in with a 3/16-inch choke to prevent blowing out, is now making about 11 barrels an hour from 5195 feet, with pressure too strong to open the well further. The No. 3, discovery well at Sweet Lake, completed October 11, 1926, is making around 135 barrels daily on a small choke from 5897 feet; also flowing under strong pressure. Preparations are being made by the Pure to start two additional wells drilling near the producers in the near future.

Lockport

Lockport field is among the most active sections in the Louisiana Coastal country, with nine wells drilling or working over by the Vacuum Oil Company. Miller No. 8 was completed for 2000 barrels pipe line oil, 24.5 gravity, from 3709-21 feet with 450 pounds pressure through a ½-inch choke. It is located in the north edge of the field's productive area and an offset to Bordages No. 3, an old producer, which is now preparing to workover.

Union Sulphur Company's Fee No. 719 well, a depleted sulphur well which discovered oil in paying quantities off the edge of the Sulphur dome, Calcasieu Parish, when deepened to 3416 feet more than six weeks ago, is still making around 140 barrels of heavy black crude. The No. 720, an offset of Union Sulphur, was drilling at 424 feet.

Locations Made

Border Research Corporation has made location for a well in Sabine Lake, 1956 feet north and 51 feet east of the southwest corner of section 22, township 14 south, range 15 west, Cameron Parish, and has the derrick up. In West Cote Blanche Bay, St. Mary Parish, the same company has a derrick for a wildcat test 2555 feet south and 1420 feet east of the northwest corner of section 18, township 15 south, range 8 east. Border Research Corporation's Grand Lake No. 1, located in Grand Lake, St. Mary Parish, was drilling at 2710 feet in gumbo last Saturday. Its Mallard Bay No. 1 was drilling at 570 feet in gumbo, Vermillion Bay No. 1 was rigging up and Calcasieu Lake No. 1 was 3229 feet in sand and shale.

Cline, Smith & Cline of Lake Charles have made location for their Conklin No. 5 in Acadia Parish, 528 feet north and 573 feet west of the southeast corner of section 45, township 9 south, range 2 east.

In Assumption Parish, at Napoleonville, Union Sulphur Company abandoned its Clifton No. 2 at 675 feet in gyp and cavity. The same company made location last week for its Bank of Paincourtville No. 1 test to be drilled in section 42, township 12 south, range 13 east.

Aside from the development of the Pure and Border Research Corporation in Cameron Parish, the Union Sulphur Company has four wildcats busy and Yount-Lee Oil Company is running one rig. Union Sulphur's Ellender No. 2 is a location at Hackberry Island, its Gulf Land No. 1 is drilling at 1684 feet in rock, the Bell No. 1 is a location and R. Vincient No. 1 is a location. Yount-Lee's School Land No. 5 was

Sabine Parish Wildcat Believed New Field Opener

Arkansas Fuel Oil Company gets 500-barrel well in test southwest of Bull Bayou-Crichton area

Staff Representative

Shreveport, La.—A new oil field is believed to have been discovered last week, with the completion of a wildcat well drilled by the Arkansas Fuel Oil Company on property owned by the Logan Oil Company in section 33-10-12, Sabine Parish. The discovery well flowed 513 barrels, by actual gauge, during the first 24 hours. The oil is of very high gravity, testing around 41½ degrees.

Location is about six miles southwest from the town of Pleasant Hill, on the Texas & Pacific railroad, and about 10 or 15 miles southwest from the Bull Bayou-Crichton fields, in De Soto and Red River Parishes. It is within a quarter of a mile of a well drilled by the Standard Oil Company about 14 years ago, which is still producing about five barrels of oil per day.

Acreage in the vicinity is owned chiefly by the Arkansas Fuel Oil Company, although the Louisiana and Texas companies are represented by close-in holdings. The Standard Oil Company of Louisiana, which, with the Gulf Refining Company, prospected the area before the Crichton and Bull Bayou fields were discovered, still holds the 40-acre tract on which its producing well is located. The Texas Company drilled two or three very small producing wells at locations two and three miles north of the Arkansas well; and a number of dry holes have been drilled during the last 15 years at locations from one to five miles north and east of the new well.

Depth 3209 Feet

The Logan well yielded a showing of gas at around 1443 feet, and was bailed dry at 3132 feet. Drilling was continued until nine feet of promising sand was penetrated at a total depth of 3209 feet, from which depth the well was brought in. It flows by heads of about 20 brarels each, at intervals of about 55 minutes. During its second 24 hours, it made 420 barrels of oil. The oil is clean and of pipe line grade, containing no sediment or water.

It is said that the Arkansas company will start three more wells at once. The Woodley Petroleum Company is said to have bought a 40-acre lease located in the same section, and offsetting the Standard Oil Company's Ives lease, for a consideration of $12,000.

The discovery well is located within a quarter of a mile of the Standard Oil Company's trunk pipe line to Baton Rouge. A two-inch gathering line has been laid to the well, and pipe line deliveries have been commenced.

Plain Dealing

It is not improbable that North Louisiana may be the scene of two important development campaigns during 1927, as five wells were started last week in the Plain Dealing area of Bossier Parish, which has been receiving close attention of two wells drilled by Woodley & Collins, one of which showed oil while the other produces gas in considerable volume from the Woodbine sand. Woodley & Collins are drilling below 2500 feet in their third test, which is located in section 14-23-12. Bahan and others, associated with the Amerada Petroleum Company, started drilling and set surface casing last week in their Gray No. 1, in section 27. The Magnolia Petroleum Company and the Louisiana Oil Refining Corporation have made locations in section 15 and 23; and the Southwestern Gas & Electric Company, of Shreveport, is building a derrick on the Dodson farm, in section 16. Clark & Norton are rigging up on the Ford farm, in section 32-23-13, about four miles north of Plain Dealing.

Davis and others are coring in the Blossom horizon at around 2760 feet in their Lee wildcat, located in section 22-22-9, southeast of the famous Gleason wells, in the Shongaloo district, of Webster Parish. The Ohio Oil Company's Pickett well, in section 30-23-9 of the Shongaloo gas field, was brought in last week with an initial volume of ten million cubic feet of gas per day from a total depth of 2658 feet.

Propose Gas Line

Belchic & Laskey, Inc., of Shreveport, have submitted a proposition to the municipal governing bodies of Athens, Arcada and Gibsland whereunder a gas pipe line may be constructed to convey gas to these towns from the Shongaloo field. It is proposed that the line, which will cost around $150,000, will be completed within four months after the towns accept and comply with their part of the agreement. The three towns are to be canvassed in the near future to determine how many consumers will accept gas service.

Reports from Arkansas attach considerable importance to the completion by Stewart and others of another fourth-sand oil well in section 9-16-15 of the Smackover field, in Union County. The new well, which is located on the famous Murphy farm, is pumping around 125 barrels of oil per day from 18 feet of sand at a total depth of 2787 feet. J. E. Crosby, of Tulsa, has set a string of 4½-inch casing at 3920 feet in his Berry deep test in section 33-15-15 of the Ouachita County section of the Smackover field.

---

drilling late last week at 3620 feet. This test, together with former wildcats of Yount-Lee at Hackberry Island, represents two years of exploration around this dome by the company.

The Texas Company's Guillory No. 2 at Pine Prairie, Evangeline Parish, is rigging up. Elton Oil Company's Buller No. 1, Jeff Davis Parish is shutdown at 2065 feet in gumbo. Other wildcats drilling in Jeff Davis Parish are Emerson et al's Pierre Comier No. 1, drilling below 300 feet, Estropal Oil Company's LeDuex No. 2, drilling at 1350 feet in rock and Fred Getty's Lacasine Irri No. 1, drilling 2450 feet in sand.

In St. Landry Parish the Bristol Oil and Gas Company's Breaux No. 1 is shutdown at 3015 feet in shale, Farmers Oil & Mineral Company's Fontenot No. 1 is shutdown at 3450 feet in shale and the Terre Bonne Gas Company's Whitman No. 1 is shutdown at 2650 feet in sand and shale.

High water in the lower part of St. Martin's Parish has been holding up drilling for several weeks. Rycade Oil Corporation's Atchafalaya No. 1 is waiting for high water to subside, the Ohio Oil Company's Martin No. 3 is shutdown on account of flooded territory, and the Calcasieu Oil Company's No. 1, near New Iberia, is drilling around 3600 feet.

Producing Wells

There are 251 producing wells in the Louisiana Gulf Coast with a well average of 53 barrels as follows:

Field	Wells	Daily well average in bbls.	Daily field average in bbls.
Vinton	145	39.8	5780
Evangeline	54	27.1	4160
Edgerly	33	17.5	578
Lockport	14	231.	3235
Sweet Lake	2	202.	404
Eagle Point	1	510.	510
Starks Dome	1	1200.	1200
Sulphur Dome	1	140.	140
Totals	251	53.	13,307

More Activity and Less Oil at Huntington Beach

Potrero, between Inglewood and Rosecrans has ten rigs and no oil, with high bonuses and royalties being offered for leases

By WM. V. GROSS
Staff Representative

Los Angeles, Calif.—While the majority of "gossip" among California oil men is concerned over whether the Associated has a new field at Potrero (Cypress), the majority of the happenings and new production comes yet from Huntington Beach's Townsite and Barley Patch. Huntington Beach has been buzzing with bonafide development for months, whereas Potrero has been buzzing with rumors nearly that long.

Although production in the booming area took another 2000-barrel drop during the week ending February 5, field activity there shows no sign of an immediate slump. This week the number of actual drilling wells incresaed to 100, and the number of rigs ready to spud in increased to 19. Drilling sites on which operators contemplate future erection of derricks, pending the trend of development, of course, number 12.

Seven new producers added to the list at Huntington Beach during the week had a total flush amounting ing to 4740 barrels. This flush however, was not enough to offset the natural decline of previous completions. The same condition is expected to exist with regard to the ratio of flush to natural decline until the field drops to its normal yield rate. This rate ought to be reached within three months.

Seven New Completions

Olympic Refining Company brought in the most important well this week at Huntington Beach with completion of its No. 1 for about 800 barrels of oil at 3950 feet, where the 6¼-inch oil string was landed. Olympic's No. 1 carries 330 feet of liner, which includes 260 feet of perforated. This well shows a cut of 11 per cent and is producing through a 35/64-inch bean.

The best well of the week was the Standard Oil Company of California's Pacific Electric Company No. 1 which produced about 2200 barrels of 18.1 gravity oil from a total depth of 4300 feet. Pacific Electric No. 1, located on the Standard's bluff lease along the ocean, had a 40 per cent cut when the initial gauge was taken but has cleared up remarkably well.

Among the other completions at Huntington Beach, Kohlbush - Johnson's Aldahl No. 1, formerly a Silverado Oil Corporation project, was brought in for 650 barrels of 12.9 gravity oil from 4365 feet. Two small wells were added to the Petroleum Securities Company's production list,—Gibson No. 1 and Griess No. 1. The former well at 3851 feet had an initial estimated at 135 barrels of 13.2 gravity oil. The well, which is a pumper, is cutting more than 50-per cent. Griess No. 1 was a 95-barrel well at 4385 feet. The Prudential Oil Corporation's Stone No. 1 flowed 700 barrels from 4382 feet on initial test, but showed a cut of 60 per cent. In addition to its Pacific-Electric well, the Standard of California brought in a small producer in its Fee No. 1, which made 60 barrels at 4363 feet. At completion, the Fee No. 1 pumper was cutting 60 per cent.

Leasing Again Active

The Olympic Refining Company's No. 1 well was referred to above as the week's most important completion because it, in conjunction with the interest felt in the San Martinez Oil Company's wildcat between Ninth and Tenth Streets, has given a new life to leasing in the boom area of Huntington Beach. The Olympic's well is located on Seventeenth Street between Walnut and Olive and now marks the eastern extremity of the Townlot area. Subsequent to the barefoot completion of the well, leases immediately east of the proven area are reported to be bringing $1000 bonus per lot, considerable royalty and provisions for drilling to start within from 30 to 90 days. Out of the field's total of 100 drilling wells, about nineteen of these are drilling in the area east of Seventeenth Street.

San Martinez Wildcat.

While leasing in the vicinity of the Olympic's well would seem to offer surer prospects to developers, due to the fact that production has been obtained, there is, nevertheless, a great deal of leasing activity at the other end of the field in the vicinity of the San Martinez Oil Company's wildcat. This well is located between Ninth and Tenth streets, on Ocean Avenue. It recorded an oil showing at 1750 feet, presumably in a zone related to the heavy oil marker commonly encountered in the field proper. At last reports, the well was drilling below 2360 feet, having logged nothing of importance since the above showing.

If the San Martinez Oil Company project shows a sand capable of producing oil, the Richfield will have to meet drilling obligations on a 10-lot community lease immediately. This lease is located on Walnut, between Tenth and Eleventh streets. In the same neighborhood, George F. Getty has leased a drilling site on Tenth and Walnut, while J. S. Harrison has obtained several drilling sites near the corner of Tenth and Orange Avenue. Preparations are being made to drill the Harrison holdings as soon as practical.

There are rumors also of an extensive leasing campaign a half mile northeast of Huntington Beach field proper. Two companies are reported to be heavily involved in the buying, believing the locality embraces an entirely new and untested structure. The leasing is being done on the northern half of section 36, a little over a mile from the heart of the city of Huntington Beach. So far, development in the region is restricted to leasing, as no derricks have been erected.

Cypress an Enigma

Ten rigs and no oil! All the operators taking part in the scurry for leases believe in the possibilities of Potrero (Cypress) but none knows—except the Associated. Potrero is located about midway between Inglewood and Rosecrans.

Information the Associated will divulge with regard to its Cypress wildcat is restricted to the brief remark, "Total depth, 4450 feet; 8⅝-inch cemented at 4383 feet." Some oil sand and shale exists between these two depths. The company will not divulge how much of either is in the hole. Notwithstanding the Associated has been in the oil sand, presumably, for months, it has not drilled in the well,—the general argument being that the Associated already has more oil than it knows what to do with and that it would be poor policy to bring in a field when California is in the midst of an era of over-production. According to economics textbooks, this policy is laudable. Oil companies, however, don't "act that way" very often. Maybe the Associated is different. L. J. King is one of its directors.

East by a little south of the Associated's Cypress, the Julian Petroleum Corporation's Smith No. 1, on the eastern side of Cypress Avenue, and five lots north of the intersection of Arbor Vitae street and Cypress Avenue, is

coring carefully ahead somewhere below 4360 feet, with a log reported to be nothing like as favorable to possible production as that of the Associated's Cypress. Of all those participating in leasing at Potrero, the Julian was the first to follow its convictions by spudding in and drilling down to the supposed production horizon as fast as it could. It has taken heavily of available leases from a point well to the north of the Associated's Cypress well to a point almost as far southeast as the old Wagner No. 1 dry hole of the Burnham Exploration Company. According to the operators, the Smith No. 1 has logged gas showings (which were logged in all the dry holes drilled around the speculated spot) but has encountered no oil sand. Despite this seemingly negative outlook, the Julian is preparing to start two more wells in the locality. L. J. King is on the board of directors of the Julian Petroleum Corporation also.

Among Potrero lessees who will start wells soon, providing conditions do not change for the worse, are the General Petroleum Corporation, with one location; George F. Getty, with two; Paul Getty, with one; California Petroleum Corporation, with two rigs moving in; Fred E. Cole, one.

Potrero Leases High

Some value of leases at Cypress may be gotten from the fact that Julian Petroleum Corporation recently was presented a proposition by one of the large operators in California whereby it would receive from the operator $1000 cash and 50 per cent royalty on two tracts embracing 21 lots. One of the tracts, is a 14-lot tract and the other a seven-lot tract. Operators in the field have been paying as high as $5000 bonus and 50 per cent royalty for drilling sites in the field.

With such fabulous prices being paid as bonuses and such unheard-of royalties being demanded, many operators in the basin are wondering where the profits from development will be going. Whether oil is found or not, the landowners certainly can have no worries. If it is not found, land departments in a number of substantial operating companies will be accused of contributing a little heavily to the civic welfare of Potrero. If oil is found in commercial quantities, and the odds seem to be that it will, (when you are talking to those financially interested at Potrero) there will have to be quite a quantity of it to overcome the great ultimate cost of production.

Texas Panhandle Operations Show Big Increase

Despite rig builders strike new work is being extended at rapid rate; premium demands check shipments in cars

Amarillo, Texas—New field development in Northeastern Carson, Gray, Wheeler and Hutchinson Counties has registered a substantial gain during the past several weeks, despite the general strike of rig builders. The strike was called January 21, after contractors held out against increasing wages $2.00 per day above the present scale of $14 and $16, and a number of the contractors have recruited their gangs from other districts, while a few met the demands of the workmen. Northeastern Carson County is now entering into its greatest drilling activity, due to recent extensions to the southeast of the Roxana pool by J. T. Parks et al and more recently by Prairie's McConnell.

More than 20 tests will be drilling within another week in close vicinity to the semi-wildcat oil producers completed by Parks et al and Prairie Oil & Gas Company. The latter company's J. W. McConnell 1, section 67, block 4, was completed January 28 with a flush flow of 1200 barrels of 41.8 degree gravity oil from broken pay at 3104-20 and 3146-50 feet, and during the 24-hour period ending Tuesday morning flowed 780 barrels. Prairie is starting five tests on the McConnell 400-acre lease, and Gulf, Skelly, Tidal Marland and Texas are offsetting with one or more tests. Skelly paid $240,000 cash for the north 320 acres in section 198, prior to the completion of the Prairie well. J. T. Parks paid $40,000 half cash, for the west half of the northwest quarter of section 67 and is starting his first test.

Tests drilling to the northwest of the Roxana field in upper Carson County afforded a mixture of success and disappointment during the past week. The Texas Company's C. R. Garner (Jordan-Brown) 1, located in the southeast corner of the northeast of section 106 and within a half mile of the best producers in Roxana field, developed a hole full of salt water at 3228 feet after swabbing about 60 barrels of oil from pay at 3143 and 3215-23 feet, with a surface elevation of 3211 feet. Tidal Oil Company held the south 80 acres adjoining The Texas Company's lease, and sold same in December to Roxana at $1,875 per acre, half cash and the balance payable in oil.

Mile Extension

Marland Oil Company's S. B. Burnett 1-F, located in the southeast corner of section 117, and about midway between the Roxana field and the original oil production in the Burnett Ranch, Carson County, was credited with 2000 feet of oil in the hole from sandy-lime pay at 3085-3130 feet, with good prospects of making a producer. This test is one mile from the nearest production and is located on acreage leased by Marland from the Burnett Estate on May 14, 1926, paying $100 per acre, cash, for 960 acres and agreeing to drill one well. S. D. McIlroy, pioneer operator in the Hutchinson County field, and G. West, who is associated with Reece S. Allen, have taken a five-year commercial lease on 640 acres of the Burnett ranch, located one and one-half miles north of the new Marland well, paying $150 per acre cash and $50 per acre additional out

PANHANDLE OPERATIONS

Amarillo, Texas—Condensed summary of field operations in the Texas Panhandle district at the close of the week ending February 5, is listed below by counties, with comparative totals for the previous week:

	Completions	Active Tests	Shut Downs	Rigs and Derricks	Locations	Totals
Armstrong Co.	..	..	1	..	..	1
Briscoe Co.	..	..	..	..	1	1
Carson Co.	3	38	7	20	9	77
Castro Co.	..	1	..	1	..	2
Childress Co.	..	1	..	1	..	2
Cochran Co.	..	..	1	..	..	1
Collingsworth Co.	..	2	1	..	1	4
Dallam Co.	..	..	3	..	..	3
Deaf Smith Co.	..	..	1	1	..	2
Donley Co.	..	1	..	..	..	1
Gray Co.	..	33	7	11	6	57
Hansford Co.	..	1	2	..	..	3
Hartley Co.	..	4	4	..	..	8
Hemphill Co.	..	..	4	..	..	4
Hutchinson Co.	13	145	19	69	44	290
Lamb Co.	..	1	..	..	..	1
Lipscomb Co.	..	1	1	1	..	3
Lubbock Co.	..	1	..	..	..	1
Moore Co.	..	8	4	1	..	13
Motley Co.	..	1	..	..	..	1
Oldham Co.	..	..	..	1	..	1
Ochiltree Co.	..	..	3	1	..	4
Parmer Co.	..	1	..	..	..	1
Potter Co.	..	1	2	1	..	4
Randall Co.	..	..	..	..	2	2
Roberts Co.	..	2	3	3	..	8
Sherman Co.	..	1	1	..	1	3
Swisher Co.	..	..	1	..	..	1
Wheeler Co.	..	14	4	4	9	31
Totals	16	257	69	115	73	530
Totals prev. week	18	239	127	57	67	508

of one-eighth of the oil and gas produced, making a total consideration of $128,000. McIlroy and West obtained the northeast quarter of section 119; the northeast and east one-half northwest one-quarter section 120, and the northwest one-fourth and west one-half northeast one-fourth section 121, all block 4, I&GN survey.

Premium demands being made by independent producers and crude brokers for oil in Hutchinson County has resulted in a big slump in tank car movement of oil from the field to refining centers in the Mid-Continent and Gulf Coast. During the week ending January 26 the daily average car movement dropped to 295 cars daily, but a slight gain was noted during the week ending February 2, when a daily average of 325 cars, or 78,000 barrels daily, were moved. Spot purchasers of Hutchinson County crude are unable to cover on their requirements in tank cars at $1.55 per barrel, although the posted price is $1.25 per barrel at the well.

The Barnsdall Oil Company is reported to be negotiating for the purchase of the producing properties held by the Echo Oil Company, Nunn-McAuley Oil Company, Palo Duro Oil Company, Spring Creek Oil Company and the Golding-Phillips Oil Company, located in Carson and Hutchinson Counties. This deal would involve approximately 8000 barrels of production and a big cash outlay.

Second Flowing Well in Blue Ridge Extension

Houston.—Navarro Oil Company brought in its second producer on the northwest flank of Blue Ridge salt dome, Fort Bend County, February 8, the Robinson No. B-1 flowing 2200 barrels initial production from 3619-53 feet, 22.5 Baume gravity. Location is 150 feet west and 50 feet south of the southwest corner of the east half of Block 8, Robinson subdivision, Shropshire Survey, and 900 feet west of the Robinson A-1, the extension well at this point in the field about two months ago.

Navarro's Robinson A-2, an offset to the extension well, was drilling February 8 at 2950 feet in gumbo. The J. S. Abercrombie Drilling Company has two wells offsetting the No. A-1, both of which are drilling around 1000 feet.

Activity around the Blue Ridge dome is growing with nine wells drilling, three derricks and two locations. Abercrombie's West Schenck No. 6, located on the south side of the dome on a 50-acre tract, is due for completion the latter part of this week with more than 100 feet of broken pay formation to a total depth of 3865 feet. A setting of 6⅝-inch casing was made early last week at 3580 feet and slow drilling ahead has followed.

McCamey-Hurdle District Crowding Handling Facilities

(Continued from page 27)

osition on the railroad, with a pipe line to the field to take its own production and make outside purchases of oil, but this installation can not be put in service before the new crop of locations are ready for completion.

The Lane, Burleson and Bowen leases held by Roxana, Dixie, Texas Pacific Coal & Oil Company and Prairie, on the southeast end of production in the McCamey-Hurdle district, is attractng the most active drilling of any single area in Upton County. Late completions near the corner of interesection of the above companies' leases have registered flush flows of pipe line oil ranging from 50 to 100 barrels per hour, and the area is proving to be the high point of the long structure, which takes a northwest to southeast course, with a rise in the latter direction. This structure was tapped in September, 1925, for the first oil production in the Crane-Upton district, and until recently the trend has been headed to the northwest. Dixie Oil Company's Burleson 11 shifted the trend of play November 22, 1926 with a flow of 562 barrels of 29.1 degree gravity oil during the first 12 hours at 2025 feet, or 81 feet in the big lime horizon. The Texas Pacific Coal & Oil Company's J. F. Lane 1-A supplied the next big well January 20 with an initial flow of 2100 barrels of 30 degree gravity oil at 1948-93 feet, or 63 feet in the lime when oil was encountered. The latter producer gauged 1760 barrels Tuesday morning, and will be deepened. It has produced 31,495 barrels of oil to date. The first of a quartet of tests being drilled by Prairie on a 40-acre lease, which occupies the southwest corner of section 5, started flowing 65 barrels per hour when drilled into pay at 1985-2063 feet, with a surface elevation of 2576 feet.

The wildcat oil producer completed in October by the Mid-Kansas Oil & Gas Company and the Transcontinental Oil Company in eastern Pecos County on the I. G. Yates land from sandy-lime pay at 990-1005 feet will be restored to active production following the completion of Humble's 55,000 barrel storage tank near the well late last week. The Yates well has been shut in since December 28, except for occasional blow offs to guard against bridging, and on the last day flowed 357 barrel of 30 degrees gravity oil. K. Kimberlin & Frank Pickrell's I. G. Yates 1, located at the center of section 55, block 1, and about four miles southeast of the discovery well, is fishing tools with good show of oil and gas at 1255 feet. This test logged the top of the salt at 460 feet, with a surface elevation of 2250 feet, and has 10-inch casing set at 500 feet.

Deeper drilling was tried late last week on the Southern Crude Oil Purchasing Company's (was R. A. Westbrook & Company) wildcat oil producer on the Hedricks land, Winkler County. The hole was deepened from 3011 to 3022 feet, when making about 105 barrels daily. The results of the drilling have not been known.

Turbeville Production Extends Southwest

Wichita Falls, Texas.—The Turbeville district in Central Archer County was extended to the southwest late last week when the Simms Oil Company's J. Turbeville 16-A swabbed 450 barrels initial from oil sand pay at 1472-96 feet. This well is near the east line of 80-acre lease, section 172, and has caused Marland Oil Company to start two offsets.

A second oil producer for the Ward pool in lower Archer County was in process of completion early this week when the Underwood Drilling Company and associate's H. L. & J. F. Ward 2 showed for a 130 barrel producer from sand pay at 1015-19 feet. This producer is in the southeast quarter of section 1379, and near a test drilled in March, 1924, by the American Refining Company et al that showed for about 10 barrels at 950 feet, but was abandoned. Marland Oil Company and the Consolidated Oil Company's Ward 1 was recently completed in section 1379, with an initial production of 65 barrels at 1014-22 feet, and an active drilling campaign is in store for the area.

Ted Harris and others were reported early this week as bailing live oil from a wildcat test being drilled on the L. H. Farmer land, W. C. Winters survey, Archer County, with sand pay at 1460-61 feet.

Townlot drilling at Muenster, Cooke County, was threatened with a setback early this week when the Oil Operators Trust's Ben Luke 2, located in the southeast corner of lot 89, and 1200 feet east of the discovery well, failed to pick up the 1280-foot sand. The discovery well is pumping about 50 barrels daily. The joint test of the Oil Operators Trust and Hedrick-Camp Drilling Company's Kleiss 1, located southwest of the discovery well, is showing for a good producer from pay at 1299-1309 feet. This well swabbed 120 barrels, and is being standardized to pump.

Flickertail Well Flows After Agitation

Great Falls, Mont.—After being rated a small pumper, The Ski-U-Mah Oil Company's No. 1 well, located in the Flickertail extension of the Kevin-Sunburst field, has become a large flowing well after tubing was set above the producing sand. The well was a lazy producer when completed through the casing and showed no signs of becoming a gusher. After the tubing was run, the action of the pump agitated the well entirely to its liking. A large pressure was built up in a short time. The well will settle to around 500 barrels daily, according to present indications. Although every well drilled in the extension has been a small producer, none has flowed of its own accord. The discovery of this pool was considered accidentol since a dry hole was drilled long before the discovery well was completed.

Oil From Coal Not Now Practical, But Possible

Europeans, having no crude oil, consider it patriotic duty to find substitutes

By ISMAR GINSBERG

THE petroleum industry has heard much in recent years of the efforts that were being made abroad by various nations to free themselves from the need of purchasing motor fuels, lubricating oils and other mineral products from foreign countries, amongst which not of the least importance by any means has been the United States, and thus avoid having to send large sums of money out of the country in payment for these purchases or in other ways becoming subject to bad trade balance. We have looked upon these endeavors with a great deal of academic interest, and perhaps with considerable skepticism as well. Our knowledge of the economics of the oil industry in our own country and of general technical conditions in our own industry and in those industries that might become our competitors has led us in the past to conclude that these attempts were abortive and could scarcely affect us here.

It is safe to say that the average oil man of today has changed his opinion about this matter. While he does not yet believe that this development has reached such a stage that it can be introduced in a practical way in this country, he must now realize that great progress has been made on the other side and that the European nations, who do not have oil resources of their own, are thoroughly in earnest in their desires to get away from their absolute dependence on foreign sources for mineral oil products.

The motor fuels that are used in France and Germany to-day, for example, are no longer pure gasoline, but mixtures of gasoline and benzol and alcohol. The patent literature is full and keeps on filling up with all sorts of projects, mostly of a very highly imaginative character, suggesting the use of most anything that will burn in air as an ingredient of composite motor fuels. But the important underlying fact in all these efforts is that the country in question wants to get away from using gasoline for which it has to pay in gold, and expresses this desire in unequivocal terms and in fact surrounds it with a nationalistic and patriotic atmosphere, so that it becomes the sacred, patriotic duty of the citizen to use as little gasoline and the like as possible. He is urged and is indeed convinced that he owes it to his country not only to use the national fuel, Carburant Nationale, as it is called in France, but also to interest himself in developing processes and the like which might make his country still less dependant on foreign sources of mineral oil products. Thus it is not surprising to find such a flood of patents on composite motor fuels.

Just before proceeding further, we might say that it was our original thought to call this article synthetic gasoline, but while gasoline is of course the principal product involved in this evolution, nevertheless there are also others such as lubricating oil which deserve consideration. Furthermore the first step in the process is not the synthesis of a gasoline but rather of a petroleum from which gasoline is then distilled in the ordinary manner. Hence we are concerned with the production of synthetic petroleum.

Stupendous Task

Those who have seen an oil well spout out thousands of barrels of oil a day and who know that it takes many such wells to supply the country's consumption of mineral oil products in a single day, understand well how huge an enterprise must be to supply these products by a synthetic process. It has sometimes been suggested that alcohol could take the place of gasoline in the internal combustion engine, but careful economists and technologists will tell you that it would not be possible to set aside enough cultivated land for growing the cereals from which the necessary quantity of alcohol could be made without seriously disturbing the food resources not only of this country but of the world. If oil supplies will eventually fail, if new fields are not found to take the place of those that are constantly petering out, if new sources of supply are to be drawn upon to take the place of gasoline and other petroleum products, it is manifest that the time to start is right now. Thus while we in this country might not have any immediate interest in the important developments that are taking place in Europe along these lines, particularly in the utilization of coal for the production of oil, we are or should be interested from the standpoint of the conservation of our natural petroleum resources.

Any successful process depends on the ease with which it is possible to secure supplies of raw materials. Any process which seeks to synthesize petroleum must have as its starting substance a product that is plentiful, that is cheap, that is conveniently located, that is easily handled and that can be worked up into the finished product with a high yield and with the least possible technical difficulty. The one product that possesses these characteristics far better than any other is coal, that is all sorts of coal with the exception of hard or anthracite coal, which could not be used anyway for this because of its high price.

Coal Best Product

Coal is the starting point in the manufacturer of synthetic petroleum and naturally of synthetic gasoline, as an ingredient of the synthetic petroleum. It is not a strange theory to use coal as the starting point in the manufacture of a finished fuel, for coal is the raw material from which that most finished and highest quality of industrial and domestic fuel is manufactured; we mean central station manufactured gas. In fact in the destructive distillation of coal by the so called low temperature process, which has had some vogue in England where the most work on it has been done, a certain amount of oil is produced. But the purpose of this process has been mainly to manufacture gas and a semi-coke or special form of solid fuel together with a special brand of tar, known as low temperature tar. The yield of oil is very small and the process could not supply the necessary amount of oil if the entire American coal production were treated in this manner every year. We have no lesser authority than Henry L. Doherty in making this statement.

Coal has however been used in very large quantities to make coal gas and water gas, and in fact gas manufacture forms one of the principal uses of bituminous coal to-day. We are most interested in water gas, which consists essentially of carbon monoxide and hydrogen, although small quantities of methane and higher hydrocarbons will also be found mixed with it, as well as dilutents such as nitrogen moisture and carbon dioxide. The use of water gas for the synthesis of hydrocarbons and alcohol was suggested a long time ago, and recently the chemical world was astounded by the successful working out of a process of making methanol, that is wood alcohol. From the scientific standpoint it is possible to make

carbon and hydrogen react to form hydrocarbons and then build up from these hydrocarbons to form more complex products and thus produce a synthetic gasoline or motor fuel. But a careful analysis of the proposition will show that this is not possible from an industrial standpoint. The patent literature reveals the fact that about twelve years ago the Badische Anilin und Soda Fabrik, one of the principal German dye works, patented the manufacture of gasoline or rather gasoline hydrocarbons from their elements. This process used carbon monoxide which was made to combine with hydrogen under high pressure and in the presence of certain catalysts to form hydrocarbons and alcohols. This marked the start of the work which later culminated in the synthesis of methanol from water gas. But the industrial synthesis of hydrocarbons by this process does not appear to be at all feasible.

Best Process

There remains just a single known process whereby it has been demonstrated that its application on a practical scale is feasible and indeed an accomplished fact. That process is the so-called liquification of coal by means of hydrogen. At the recent conference held in Pittsburgh, Pa., under the auspices of the Carnegie Institute of Technologists, which was concerned with the progress in the utilization of bituminous coal and which was attended by prominent scientists and technologists from all over the world, Dr. Frederich Bergius delivered a talk on the process that bears his name and that has for its purpose the synthesis of petroleum by the hydrogenation of coal. We wish to say here that we are indebted to his excellent paper for certain facts which are included in this article.

The use of hydrogen to produce new products by having it combine with certain substances is rather well-known. Thus cottonseed oil is treated with hydrogen, that is hydrogenated, and converted into a solid fat. In this case a solid is derived from a liquid. Hydrogenation is also made use of in the production of certain new solvents—comparatively speaking—known as tetralin, hexalin and decalin, the first and last being made from napthalene, a solid, and the second being made from phenol which is a solid at ordinary temperatures. But in the case in question, the action of the hydrogen is quite the reverse. For here hydrogenation of the coal produces a liquid, or it may be held that the gaseous hydrocarbons in the coal are converted into the liquid condition by addition of hydrogen. However that may be the important fact is that the treatment of the coal with hydrogen under pressure and in the presence of catalysts results in the formation of an oil which resembles petroleum.

To understand what happens in the liquification of coal the composition and the formation of coal must also be understood. Thus both natural coal and lignite are composed of two sorts of chemical compounds. One of these which is the carbonaceous part is derived from the cellulose and lignin parts of the plants that have undergone decomposition to form coal. The second portion or the bituminous part is derived from fats, albuminous material, resins, waxes and other similar materials. The carbonaceous portion containing hydrogen, carbon and oxygen, while the bituminous portion is composed of higher proportions of hydrogen and lower proportions of oxygen.

When the ratio between hydrogen and carbon is figured in an average coal, it is found to be about one to sixteen, but in a liquid oil it is one to eight. Thus it is easy to see that there is just half as much hydrogen in the coal per part of carbon as there is in the oil, and hence in order to convert the coal into an oil, it is necessary to double the proportion of hydrogen. The essential point is to save as much as possible of the hydrogen in the coal, for hydrogen is a rather expensive commodity.

Bergius therefore holds that distillation and synthetical processes of manufacturing oil from coal are not tenable. For they tend to drive the hydrogen out of the coal and some of it is lost. Furthermore in the synthetical process some oxygen is caused to combine with the carbon to form carbon monoxide. It is also established that the production of hydrogen means the consumption of coal or of energy and that for making one weight unit of hydrogen at least eight weight units of coke are necessary. The important point is therefore to conserve the hydrogen that is bound up with the carbon in the coal.

Difficulties Encountered

This principle is the basis of the Bergius process which is concerned with the direct hydrogenation and liquefaction of coal. It was first developed by Bergius in his laboratory in Hanover, Germany in 1913. The development of the method was no accident in any sense of the word but took a great deal of time and study. It was really based on the contention that coal contained a number of chemical compounds which could be made to absorb hydrogen under certain definite conditions. One point that appeared problematical right at the outset was whether it would be possible to make the apparently inactive or rather indifferent coal substance absorb hydrogen, that is combine with it. The work that was done in the synthesis of ammonia from its elements and also in the hydrogenation of oils to obtain fats indicated the path along which further research should be made. In other words the correct catalyst had to be chosen wherewith to effect the hydrogenation.

As in most chemical processes when it was attempted to produce an oil from coal by hydrogenation, it was found that other products ensued and interfered with the process. Thus coke was formed instead of oil. On investigation it was discovered that the hydrogenation of coal generated a great deal of heat and this heat was lead off with great difficulty with the result that superheating of the coal substance occurred and instead of hydrogenation, the coal was distilled and coke produced.

It was thus realized that the liquefaction of coal involved two distinct processes. One of these was addition of hydrogen to the coal substance and the other distillation of the coal. It was also found that within certain temperature limits the velocity of the hydrogenation was greater than that of destructive distillation, but as the temperature increased the velocity of the latter reaction became greater. Hence even when a high hydrogen pressure was used and intimate contact of the gas with the coal substance was secured, the product was nevertheless not oil but coke.

The coal starts to hydrogenate at a temperature of 300 to 350 degrees C and the product obtained is still solid. It is in reality a sort of pitch which contains considerable proportions of hydrogen but which has a fairly high melting point. If however the treatment is continued at a temperature of 450 degrees C, then the product becomes liquid. Thus liquefaction consists not only of the addition of hydrogen to the coal substance but also of the splitting of the larger molecules of hydrogenated coal substance into smaller ones while hydrogenation continues. It might be said that the second operation is a cracking process in which hydrogen is absorbed.

The hydrogenation of coal yields a variety of hydrocarbons. The series begins with methane and continues upwards in the paraffin series reaching even the highest molecular weight members. Not only methane hydrocarbons but also aromatic and various aliphatic hydrocarbons are found and also the hydro-aromatic compounds, in fact all sorts of hydrocarbons are present with the exception of course of the unsaturated hydrocarbons which cannot remain unsaturated in an atmosphere of high pressure hydrogen. Furthermore, phenolic substances are present in the oil, chiefly cresol and also ammonia.

It has been mentioned that all sorts of coal can be used as starting points in the manufacture of synthetic petroleum by hydrogenation. However there are certain varieties of coal that are better suited than others, and a great many experiments have been carried out by Bergius and his workers on this subject. Not only coals but lignites were also tested and in fact the investigation included almost every sort of coal known with the exception of anthracite coal. The reactivity of the

lignite coals is somewhat greater than that of the bituminous coals in that they are more readily liquefied and leave behind only ten per cent of untransformed material. About fifty per cent of the nitrogen of the coal is converted into ammonia and the rest is found in the form of an organic base in the liquid products. The greatest part of the sulphur in the coal is converted into sulphurous acid and sulphur can be recovered from this gas.

The fact that lignites are so well suited for this purpose is of great importance to us in this country, for we have enormous deposits of lignite coals in the middle western states particularly which are for the most part untouched at the present time, only haphazard attempts being made to use them for fuel purposes. If ever the time comes when we will have to make petroleum from lignite, we can feel assured that there will be plenty of raw materials to draw from in our own country without having to look for supplies elsewhere.

Yield

Depending on the character of the coal that is employed for liquefaction, the yield varies between 107 and 185 gallons of oil per two thousand pounds of coal. These figures are based on the ash containing samples of coal as it is taken from the pits. It should not be thought that special types of coal only can be used for this purpose. This is not so, for all kinds of coals, excepting the real anthracites, can be employed, and the yield will vary between forty and seventy per cent, provided the ash content of the coal is not higher than ten per cent and the moisture content not more than five per cent. Of course if the ash content is higher, the yield will be less.

What the oil man is particularly interested in is the character of the products that are obtained by this process. He wants to know whether or not the oils that are made by this method are really like petroleum, and that it is possible to obtain from them gasoline, lubricating oil and similar mineral products. The answer is that the coal liquefaction products are very similar to those that are obtained from crude oil. They are not at all like the tars that are obtained from the distillation of coal at high and low temperatures. Thus it is reported by Bergius that one thousands kilograms of coal will give 150 kilograms of marketable gasoline, two hundred kilograms of a middle fraction which contains gasoline and impregnating oil and a residue from which sixty kilograms of lubricating oil and eighty kilograms of fuel oil can be obtained. When this is calculated in short tons and gallons, it means that one short ton of bituminous coal will give forty five gallons of gasoline. The endpoint of this gasoline is 437 degrees F.

It is interesting to note that the gasoline that is made by this process contains a rather large proportion of aromatic and hydro-aromatic hydrocarbons. These aromatic hydrocarbons, benzol and the like, mixed with the gasoline endow it with anti-knock properties. In an article on motalin which was published in a previous issue of The Refiner and Natural Gasoline Manufacturer, the author described in detail the results that have been obtained abroad with the use of benzol-gasoline composite motor fuels and the anti-knock properties of the motor fuel thus composed. Furthermore it is possible to dilute this gasoline, that is the product obtained from the liquefaction of coal, with normal gasoline and obtain a product which also has anti-knock properties.

The production of a good grade of lubricating oil from liquefied coal was a problem which required considerable attention and which has only recently been solved. This can now be done, and is being done on a practical scale. Cresols and xylols are also contained in the residues. These are products which are well suited for impregnating and preserving wood and the like and are of particular importance to us in that we use large quantities of cresotic oils for impregnating purposes.

It can well be understood that the technical difficulties surrounding the application of this process on a large scale were great, but Dr. Bergius reports that they have been successfully overcome. Thus one of the first difficulties concerned the feeding of coal into high pressure apparatus in a continuous stream, and also in removing the mineral residues and small portion of unchanged coal from the apparatus. The coal is now ground into small pieces and mixed with the heavy part of the oil to form paste and this is forced by pumps into the apparatus. The whole of the reaction mass consisting of gas, liquefied coal, untransformed coal and ashes are drawn out of the apparatus. The ingredients are then separated out.

Difficulties Overcome

In 1916 a plant was erected which worked under high pressure and with temperatures reaching to 400 and 500 degrees C. A pressure of 2200 to 3000 pounds per square inch is required for coal liquefaction. Larger apparatus has since been designed and has been brought to a practical running condition. Various technical difficulties were encountered and one by one they were overcome. In working with high pressures it was of course necessary to design a pressure-tight apparatus, stuffing boxes and the like that were absolutely tight, and in addition thereto the heating arrangements had to be given very close attention, for it is essential to heat to the proper temperature and avoid overheating. The control of the temperature, which when allowed to go too high results in the formation of coke instead of oil, was therefore a very important point. The heating medium was rather unique, and it had to be for it was quite impossible to think of heating the apparatus through its thick walls by a direct fire. Thus a chemically indifferent gas was employed, such as nitrogen or carbon dioxide, which was heated externally of the apparatus and then circulated through it by means of a pressure pump. Furthermore this stream of compressed gas was also utilized for removing excess heat from the reaction mass within the apparatus. The economy of this process was found to be high.

The coal is used in ground form and when it contains large amounts of ash it is generally possible to make it suitable for this purpose by flotation. The reagent is hydrogen and the economy of the entire process depends on the cheapness with which this reagent is manufactured. One rather advantageous feature of the coal liquefaction process is that, contrary to other processes in which hydrogen is employed, such as the synthesis of ammonia, it is not necessary for this gas to be used in the pure condition. Impurities in it do not affect the liquefaction and it may indeed be mixed with other gases, the principal requirement being that a sufficient concentration of hydrogen is present in the mixture.

The required hydrogen is thus manufactured by heating methane gas with steam with the result that hydrogen and carbon monoxide are formed in a mixture which contains a predominant proportion of hydrogen.

Roxana Has Show in Test West of Garber

Tulsa.—The Roxana Petroleum Corporation and the Staley Oil Company have a showing of oil at 6133 feet in their Brunken No. 1, in the southwest corner of the northeast of section 29-23-4w in Garfield County, Oklahoma. The well is a wildcat test west of the Garber field.

A show for oil was had in the Mississippi lime a few weeks ago. Drilling on down the Wilcox was topped at 6133 feet. Continuing, the formation began softening at 6147 feet and the well started making oil. The well was finally drilled to the total depth of 6153 feet.

Reports from the well carry the information that when the bit was removed from the hole crude followed it to the top and then flowed over the top of the casing in a steady stream for several minutes. About one and a half million cubic feet of gas was found with the oil.

This test was started just a year ago. Rotary was used 3842 feet where the 8¼-inch casing was set. The hole was carried on down with standard tools. The size of the present hole is 5-3/16-inches. There is about 300 feet of open hole.

Installation of small vertical "water well" type compressors in service at Goose Creek flowing wells by air lift.

Small Units Used on Air Lift at Goose Creek

Water well compressors of 125 pound capacity prove economical in energy cost and increased production

By GEORGE REID
Staff Representative

TWO oil wells on the Atlantic Oil Producing Company's Goose Creek lease are producing under the jet system of air lift, being jetted in much the same manner as is usually applied in the operation of water wells, and in this instance with identical equipment.

Production in the Goose Creek field is accompanied by quantities of salt water but this condition is occasionally compensated by the high fluid levels maintained in some of the wells. On the lease in question there are 17 producing wells yielding a total of around 400 barrels of oil daily. Of these there are fifteen wells producing on the pump and two which are flowed artificially by means of the compressed air injection system. These two wells are easily adapted to jet producing methods because of the high fluid levels in the holes. A third well, which also has a relatively high fluid level, is soon to be taken off the pump and placed on the air lift system. Compressor equipment is being installed for this purpose.

Water Well Compressors

An accompanying figure illustrates the type of equipment being employed for flowing the wells by air. In comparison with some of the more massive compressor installations often found in air and gas lift work, this installation of small upright water well type compressors might be termed as miniature. The small verticle Type 15 Ingersoll-Rand compressors used are less than three feet in height, and in their operation to produce an air pressure of 125 pounds per square inch it is necessary to use only a five horse power electric motor. The motors driving the compressors by belt connection are 440 Volt Westinghouse. Three complete units of this type are shown in the accompanying illustration. One of these is the original installation used to produce water for the lease requirements. The two other completed units are blowing separate oil wells, while a fourth unit of this type is being installed for the artificial flowing of another oil well.

High Water Level

It is required that the fluid level of the well be relatively high before the company considers it advisable to install the air jet system, and wells of this type only are being flowed in this manner. It was found that little volume of air was required to cause the regular or continuous flowing of the well, but that the pressure of 125 pounds per square inch at the compressor was necessary. Since the small water well machine is ample for this purpose, and also not costly to install, best economy pointed to their use.

One well, for example, which formerly was producing under rod and pump methods with a 15-35 horsepower electric motor pumping assembly, is now flowing 30 to 35 per cent more fluid (both oil and water). With the little compressor unit driven by a five horse power motor. When the third well is placed upon the air jet system, three five horse power electric motors will perform the work of flowing three wells, and take the place of one 15-30 horse power motor which formerly operated but one well. Thus electricity for power purposes is to perform three times the amount of work with virtually the same energy expended and practically the same cost for "juice". Lease operators state that the cost of electricity for the three small compressor motors in continuous operation amounts to around $3.00 daily.

The wells operating by means of air jet equipment are producing from the depth of 2800 to 3300 feet, but fluid stands in the holes as high as 600 feet from the ground surface. A 4½-inch oil string is usually used in the wells. Oil and water have risen to the approximate level mentioned above in this string.

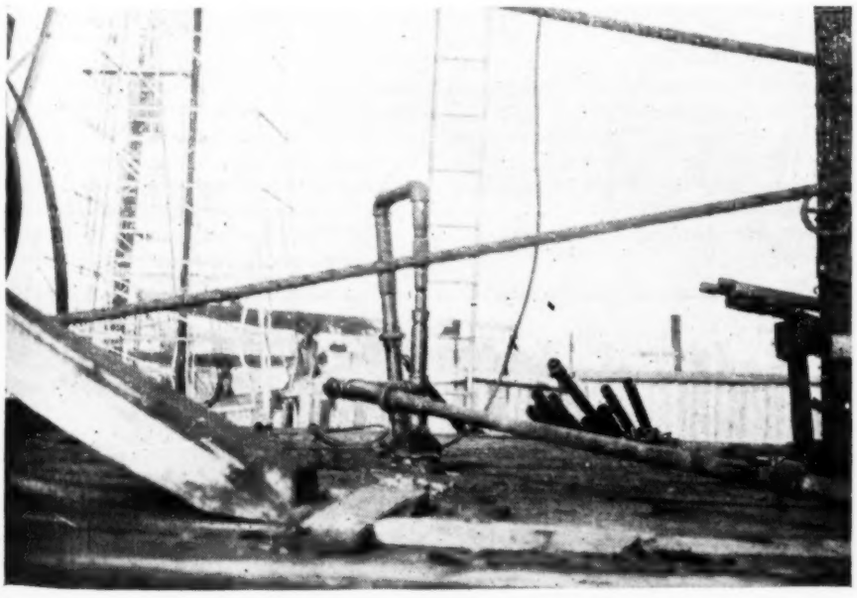
Galvanized Tubing

A string of 2½-inch Byers galvanized tubing is inserted reaching a few feet below this level and at the bottom of this string there is secured a jet or flow device of the O'Boyle type. Leading to this jet and inserted with-

in the 2½-inch tubing is a 1¼-inch line through which the compressed air is conducted to the flow device or jet. Compressed air entering the jet through the 1¼-inch line forces the column of oil and water upward and out of the 2½-inch tubing and into the flow tank. Galvanized pipe has been found to be the more economical tubing for the reason that it more effectively withstands the corossive action of the salts, etc., occurring with the field production. Tubing of plain pipe was found on the lease in junk piles, which had been highly perforated by corrosion while in use only a few months. The galvanized material is proving its economy by remaining in service for much longer periods.

The second well to operate under the air lift system had formerly incurred much sand troubles and was a source of almost constant anxiety to the lease operators. The air lift system in operation removed sand for a few days but it soon cleared up and has never recurred.

Wells operating on the pump in this area are subject to the usual rod wear and this is abetted by the corrosive action of the salt water. All metal equipment is attacked. Barrels are corroded. Cups are not immune and require frequent changing—with the customary expense of labor and loss of production while repairs are being effected. One of many such factors contributing to the "off production" time for each well is continually presenting itself,—while the air lift installations are in continuous operation. Pumping equipment in fact, has been removed from the two wells at present operating on the air jet system for use on other wells. This condition points to much greater economy of operation from the viewpoint of production cost per barrel of oil,—and in addition to lowered costs, has come the increase of 30 to 35 per cent in the daily oil production of the wells being artificially flowed by air jets. Measured in size, this is probably the smallest "per well" installation in air lift service, and it follows that where the equipment is small, including the items of compressor, motors, and lines, then the cost is small and excellent economy is secured.



Showing details of air jet system "hook up" at the well. Atlantic Producing Company's Goose Creek lease

The Texas Company Pays Over Two Million For 320-Acre Producing Lease in Brown County

Cisco, Texas.—The Texas Company has contracted to purchase the Geo. A. Henshaw Jr. & Company's 320-acre lease on the R. M. Lowe land, which is the most prolific tract in the Fry field, Brown County, for a consideration reported at $1,750 000 cash and an additional $350,000 to be paid in oil Title examinations are being made this week, and in the meantime The Texas Company has taken over the operation of the lease, which has 15 wells making approximately 6000 barrels of 43-44 gravity pipe line oil daily from the 1200-1300 foot sand pay. The buyer is to be credited with all oil run from the lease since February 1.

The first producer was brought in on the Lowe lease October 8, 1926, flowing 11 barrels per hour at 1300-08 feet, and the production jumped to 500 barrels daily when the well was deepened to 1316 feet. The first well was drilled in the northwest corner of the lease, and since this completion two more producers have been drilled on the west end of the tract, with the balance of the producers scattered in a single row along the north line to meet offsets held by Amerada Petroleum Corporation, Sinclair Oil & Gas Company and the Rex-Tex Company & Py-Tex Oil Company. Inadequate pipe line outlet for the oil as produced prevented the original owners from drilling up inside locations while the property lines were being defended.

The Geo. A. Henshaw Jr. & Company maintains a field office at San Angelo, Texas, and headquarters are at 100 Broadway New York, while a branch is located at 403 Colcord building, Oklahoma City. Geo. A. Henshaw, Jr., is a pioneer wildcatter in Mitchell, Howard and other West Texas counties, having been associated at that time in the partnership firm of Cheate & Henshaw.

The Fry field in Western Brown County is shooting at new peak levels on flush production, and is proving to be one of the most attractive shallow high gravity oil fields in Central West Texas, with an unusually thick body of sand pay to draw from. Humble, Texas and Prairie have been trying to handle the production of this field and a group of nearby pools that may eventually be connected up with four-inch lines, and these have proven inadequate for the sudden volume of flush created within the past several weeks, thereby making it necessary for producing wells to be pinched. The Fry field has a total of 76 flowing and pumping wells with a combined daily output of 16,950 barrels, according to gauges taken late last week, while the nearby pools being developed by Gibson Oil Corporation, Sawyer et al, Wentz Oil Corporation, E. L. Smith Oil Company, J. K. Hughes Development Company, Gilman et al, G. P. Mitcham et al, C. O. Moore, Powers et al, Price & Daniels and Roxana boosts the output of the entire district to about 20,000 barrels daily from 98 pumping and flowing wells.

Production in the Fry field proper at the close of the past week was distributed as follows, with the name of the lease and the number of wells shown:

Operator and lease name—	No. Wells	Daily Prod.
The Texas Co. (was Henshaw, Jr., Co.'s) Lowe	15	6,500
Sinclair Oil & Gas Co.'s J. H. Fry	4	4,000
Rex-Tex Co. & Py-Tex Oil Co.'s J. Fry	4	2,000
Amerada Pet. Corp.'s J. H. & M. E. Fry	18	1,800
Wm. V. Lester et al's M. E. Fry	17	1,500
The Texas Co.'s W. N. Pugh	6	800
Magnolia Pet. Co.'s M. E. Fry	5	180
C. B. Shaffer & Barbour Oil Co.'s Willis	1	100
Humble Oil & Refining Co.'s M. E. Fry	6	70
Totals	76	16,950

The Fry district has been extended more than a mile to the south of production by the wildcat producer scored recently by O. H. Shoup, Jr. et al's John Byler 1, located on north line of lease in the southwest part of section 43, T. & N. O. Ry survey, flowing 100 barrels of 43 gravity oil at 1262-73 feet. This discovery opens a big stretch of territory for development, and has resulted in big premiums being paid for acreage.

Some Speculations Upon What Goes On Inside a Separator

Retarded motion of oil-laden gas entering the chamber permits gravity to act upon oil particles and reduce to liquid

By *ALEXANDER B. MORRIS*

IN a previous article the place in the industry demanded by the oil and gas separator was explained; and the relation which this highly useful piece of equipment bears to other devices for accomplishing similar purposes was described. That article contained nothing of a controversial nature. It directed itself entirely to facts of performance.

In the present article the writer has been much bolder and has entered a field where conjective rules,—where at present, so far as he is aware, no definite information of scientific value exists. Hence in the following most of the premises are guesses, and the conclusions drawn from them are open to attack from anyone. It is not intended herein to start a controversy over matters of fact; because it is admitted in the beginning that it may all be wrong. It is hoped that ideas may be suggested to prospective purchasers of separators which will require rebuttal with actual evidence by the competing salesmen, thus resulting in a real advance in the general knowledge of separation, at the same time leaving final decision upon each one of the points involved directly up to the purchaser, who has thus been able to review the evidence. If this discussion will serve to stimulate some degree of original thought upon the subject on the part of those having charge of the operation of separators, and in a position to observe some of the details of their performance in their everyday line of duty, the writer will feel amply rewarded.

Things to be Considered

In treating any subject in a broad way it should first be determined exactly what is being discussed, exactly what is the problem under consideration. The second step is determination of the natural forces which are available to cause the desired end: and the third is the consideration of various practicable means for turning these forces to effect. Most discussions of this important phase of oil production have heretfore started at the intake connection to the separator or trap and have confined themselves to what was supposed to take place within the apparatus. Here we shall go back beyond the separator to the bottom of the well where first the oil and gas come into contact with equipment for their recovery. It is at this point, the face of the sand, that they emerge in close association and it is at this point the separation actually begins. Different wells, and the same wells at different times, behave quite differently as regards the manner in which they discharge their oil and gas output. In the larger wells and in the early history of many not so large, such great volumes of gas are released with the oil that the mixture is carried out of the well in the form of froth or fine spray and so little of the oil production leaves the casinghead or flow line in the form of a stream that it can be practically neglected. Under such circumstances the oil is sprayed out with the gas and a very large though undeterminable amount is in the form of a very fine mist. A probably still larger amount is in the form of small drops which are large enough in themselves to fall to the ground readily when their momentum is lost. The slowness with which this oil mist settles is readily apparent at the time of shooting any well that contains oil in the hole at the time the well is shot. With even a slight breeze this mist is carried hundreds of feet and is noticeable upon the leaves of trees and shrubbery at considerable distances.

At other times, wells flow by heads, discharging first considerable bodies of oil which fill the pipe to its full diameter as a lquid for a short distance. This is followed up by a release of the gas which drove this body of oil up the well and which carries with it a large amount of spray and froth swept from the sides of the pipe as the gas passed through. Some wells even flow large quantities of oil with relatively small amounts of gas, but in all cases of flowing wells, enough gas is present to cause loss of oil in the form of mist or spray if the flow line discharges into an open tank.

The Separation Problem

It is clear from the foregoing that the oil which comes from the line as a more or less homogeneous body of liquid and is discharged into the separator or flow tank presents no serious problem of separation except in so far as the gas which accompanies it or follows it results in splashing inside of the container. This could be controlled by baffling. The real separation problem is concerned altogether with the reduction of oil carried as a spray, or froth mist in the gas, to the form of liquid bodies of sufficient weight to flow to the bottom of the tank against any agitation due to the incoming stream. The separation problem therefore consists of three parts:

1. The catching and holding in a chamber as well protected as possible from the effects of the incoming stream of all large bodies of liquid oil.
2. The knocking out of the gas stream of the large drops and particles of oil carried with it and the delivery of the coil so recovered into the sump.
3. The knocking out of the gas stream of the extremely fine particles of oil which are so fine as to be kept in suspension in the gas by even slight

VELOCITIES IN FEET PER MINUTE IN VARIOUS SIZES OF PIPE WHEN DISCHARGING AT 100 POUNDS GAGE PRESSURE

M. Cu. Ft. Per 24 Hrs.	Cu. Ft. Per Min.	2 in.	3 in.	4 in.	6 in.	8 in.	10 in.
50	35	202	90	50	22	13	8
100	69	398	177	100	44	25	16
250	174	1,004	446	250	112	63	40
500	347	2,002	890	500	223	125	80
750	521	3,006	1,336	750	334	188	120
1,000	694	4,003	1,779	1,000	445	250	160
1,500	1,042	6,011	2,672	1,500	669	375	240
2,000	1,389	8,013	3,561	2,000	892	500	320
5,000	3,472	20,030	8,902	5,000	2,229	1,250	800
10,000	6,944	.....	17,804	10,000	4,457	2,500	1,600
20,000	13,889	.....	35,611	20,000	8,915	5,000	3,200
30,000	20,833	.....	.....	30,000	13,373	7,500	4,800
40,000	27,778	.....	.....	.....	17,831	10,000	6,400
50,000	34,727	.....	.....	.....	22,291	12,500	8,000

APPROXIMATE PRESSURES AT BOTTOM 1000 Foot Well

2 in.	3 in.	4 in.	6 in.	8 in.	10 in.
100	100	100	100	100	100
100	100	100	100	100	100
102	100	100	100	100	100
109	101	100	100	100	100
119	103	100	100	100	100
132	105	101	100	100	100
163	109	103	100	100	100
200	118	105	101	100	100
451	286	126	104	101	100
.....	332	182	114	104	101
.....	651	225	148	114	104
.....	.....	465	194	128	116
.....	.....	.....	244	146	117
.....	.....	.....	297	168	126

agitation, particles comparable to the water particles in a heavy fog or very fine mist-like rain.

Conditions in Well

Before beginning the discussion of the actual mechanical separation, it will be interesting to make some observations on conditions in the casing and tubing of flowing wells. With this in view the attached table has been prepared using Johnson's formula for flow of air in round pipes.

Suppose that a well is producing two million cubic feet of gas a day through a six-inch line against pressure of 100 pounds gauge measured at the top of the well. Table shows that the gas passes out of the line at the rate of 892 feet per minute and if the well is 1000 feet deep the pressure on the face of the sand at the bottom of the well is 101 pounds. If it is 3000 feet deep, 102 pounds. If it is 5000 feet deep, 103 pounds. However, many flush wells produce far greater volumes than this. The writer knows of one well producing 2800 barrels of oil and fifty million cubic feet of gas a day through a six-inch line into a separator against 100 pounds pressure on the separator. The well is about 4300 feet deep. Had it been 3000 feet deep the pressure at the bottom of the hole—the true back pressure on the sand—would have registered in the neighborhood of 511 pounds instead of 100 pounds as shown on the separator, and had it been 5000 feet deep the pressure on the sand would have been 578 pounds. It was probably somewhere about 550 pounds and therefore there was a 450 pound pressure drop between the sand and the separator. This pressure drop represents work which was expended in accelerating the oil and gas mixture from approximate rest to a speed of 22,291 feet per minute or nearly 250 miles per hour against gravity, at which velocity the mixture entered the separator.

Speedy Flow

A cubic foot of this mixture of oil mist in gas, at 100 pound pressure weighs slightly less than a half pound. This gives some idea of the momentum of the stream entering the separator. This well discharges into the separator every minute 4371 cubic feet of material weighing about 0.478 pounds per cubic foot, at a speed of 250 miles per hour.

The conditions outlined above represent the early flush production of the well. Undoubtedly, as the gas volume dropped off, this well began to flow by heads. In other words, there was insufficient gas flow into the bottom of the hole to spray out all the oil that ran in so that large bodies of liquid had a chance to accumlate. These large bodies were driven up the pipe more or less intact by the gas behind them and issued from the top of the well as streams of liquid. Between streams in any one head gas and oil mist will blow out this mist being composed of the oil which clings to the sides of the pipe as the slug of oil moves upward and which is stripped off by the swift passage of the gas as it escapes from behind the slug. Any one can produce a similar effect with an ordinary soda straw when drinking the last few drops in the bottom of the glass. Slugs of liquid separated by air bubbles proceed upward through the straw driven by the excess pressure of the outside air over the reduced pressure (vacuum) produced in the mouth.

Flow by Heads

Wells flowing by heads present an entirely different separation problem from steadily spraying wells. In the former a large part of the actual separation has already taken place, the amount of oil in the form of mist being very much less than in the latter case. The truly remarkable feature is that any separation at all can be effected upon this gas mist when it is borne in mind that in the well from which the above figures were obtained the oil represented only 11 parts in 4370 by volume. In this case the separation of the oil from the gas was conducted in a manner entirely satisfactory to the producers, but no data are available to show how much oil was actually carried over into the gas lines. From a practical standpoint there was no carry-over. That there was actually some seems certain, and without this information no estimate can be made of the true efficiency separation.

The foregoing well constitutes a fairly clear exposition of what the problem of separation consists of. The natural forces available for effecting this separation should now be investigated. The first is gravity which will remove from the enterng stream all homogeneous bodies of oil and many of the larger drops. The effect of gravity is very much increased as the velocity of the entering stream is reduced. In fact, the effect of gravity can be almost entirely destroyed by high velocities and this is the more true the finer the mist partcles of oil carried in the gas. Reduction in the velocity by passing the gas through a large chamber such as the inside of the separator tank merely provides a condition under which gravity can operate to the best advantage. The difference in density between the oil particles, however fine, and the gas in which they are carried, provides another means of separation. If the entering stream has a velocity of 250 miles per hour and this is reduced to an average velocity through the separator of about half a mile an hour, the momentum of the oil particles entering in the mist will serve to carry them through the gas in the direction of travel at the time of entering until they strike some interposed surface such as a baffle or the opposite side of the separator. Here they accumulate and fall to the bottom of the tank, running off the surface in a sheet. However, even though the average velocity of the gas through the separator may be as low as half a mile an hour, the fact that it entered the separator chamber at a very high velocity will cause violent agitation in the gas with violent eddies and cross currents, which will serve to keep in suspension all the mist particles which do not happen to come into contact with the baffle. This would probably include practically all the mist carried in the outside layer of the stream all the way around it, since this part of the stream would be deflected from its course gradually by the escape of the central portion from in front of the baffle. This gradual change in direction operating on the extremely minute particles would serve to steer many of them away from direct contact with the baffle and due to the violent internal movements in the gas, these particles would tend to remain in suspension unless otherwise removed.

Retarded Motion

Using the figures for the well that have been quoted above and taking the actual dimensions of the separator into which this well discharges, namely, 54-inch diameter by 16-feet high with an effective length above the oil level of

OF WELLS OF DIFFERENT DEPTHS WHEN DISCHARGING AT 100-POUND GAGE PRESSURE AT TOP OF WELL THROUGH VARIOUS SIZES OF PIPE—POUNDS PER SQUARE INCH

3000 Foot Well						5000 Foot Well					
2 in.	3 in.	4 in.	6 in.	8 in.	10 in.	2 in.	3 in.	4 in.	6 in.	8 in.	10 in.
100	100	100	100	100	100	100	100	100	100	100	100
101	100	100	100	100	100	102	100	100	100	100	100
107	101	100	100	100	100	109	101	100	100	100	100
124	104	101	100	100	100	130	105	101	100	100	100
150	108	102	100	100	100	161	110	103	100	100	100
179	117	103	101	100	100	197	117	105	101	100	100
247	129	104	101	100	100	276	136	110	101	100	100
318	147	113	102	101	100	359	158	116	103	101	100
776	292	165	111	103	101	883	328	180	114	103	101
.....	565	285	138	110	104	.....	641	320	147	113	105
.....	1,026	551	227	136	113	.....	.....	624	241	145	117
.....	.....	823	308	172	127	.....	.....	936	344	188	135
.....	.....	1,098	402	213	146	.....	.....	.....	456	236	157
.....	.....	.....	511	260	169	.....	.....	.....	578	291	183

14-feet, the average velocity through the separator is 286 feet per minute, requiring approximately three seconds for the gas to traverse the 14 feet. This corresponds to a breeze of 3¼ miles per hour. Even this average velocity is sufficient to hold in suspension the finer particles of mist. How much more effective the momentun imparted the oil particles by their high entrance velocity and the instantaneous checking of this entrance velocity by directing the stream against a baffle is, than is the force of gravity acting alone, may be seen from the following comparison of the forces exerted, first upon an oil particle traveling at 22,290 feet per minute and brought to rest in 14 feet, and, second, the same particle acted upon entirely by gravity. The force exerted on the particle is found to be 153 times as great as the pull of gravity. If instead of being checked in 14 feet, the checking takes place in one foot by a baffle interposed one foot away from the opening of the entrance pipe, 2146 times as great. This is developed in the formula for retarded motion, in which s equals the distance traveled in coming to rest; v equals feet per second; and a equals acceleration: the formula being:

$$s = \frac{v^2}{2a}$$

It would therefore seem advantageous in all separators to direct the entrance stream against a baffle close to the opening of the intake pipe, causing as many of the oil particles held in the gas to come into actual contact with the baffle as possible. This theory, however, is flatly denied by many well informed authorities.

It is doubtful if the use of baffles in a relatively slow moving stream of gas has any great effect upon separation. The area of surface of the small particles is so great in proportion to their mass, that the frictional effect of the surrounding gas will overcome the tendency of the particle to maintain their original direction of travel unless the velocity is kept high. Thus if a stream moving at the rate of 11.4 feet per second strikes a baffle 2 inches away from the opening, the tendency for the oil to separate out due to this velocity will only equal the tendency due to gravity in quiet gas. A velocity of eight feet per second with the baffle one foot from the opening will have the same effect; whereas a velocity of 100 feet per second, with the baffle one foot from the opening, will exert a force for separation 155 times as great as gravity acting in quiet gas.

Likewise baffles are probably of little use unless sharply inclined to the direction of flow. A baffle making only a slight angle with the entering stream might knock out all larger oil bodies, but the smaller ones would be swept past and away from it by the friction of the surrounding gas.

The difference in density between the oil particles and the gas in which they are suspended is also taken advantage of by using the centrifugal principle; the incoming stream entering the tank tangentially and the idea being to set up a whirling motion within the tank so that this denser portion will be thrown against the sides of the tank and so fall to the bottom.

The difference in centrifugal force set up by oil particles driven around a 54-inch circle at 250 miles per hour, and that set up in gas at the same velocity would be very great, but there is no way of figuring the strength of the eddies set up in the pipe by the turbulent flow of the gas, which might be sufficient to overcome a large part of this advantage.

Some separators are designed with the idea that gas held in solution in the oil will be released while the oil is passing through the separator. If the oil collected in the sump be kept reasonably free from agitation, gas bubbles held in it will of course rise to the top and mix with the other gas above the oil. That there is any great release of gas from actual solution is very doubtful since in order for this to be possible a reduction in pressure in the separator and a consequent expansion of the gas would have to take place. Any pressure drop between the sand and the outlet of the separator takes place in the casing and flow line, and but little, if any, in the separator itself. Thus the pressure has been relieved before the oil reaches the separator; and in view of the terrific agitation to which it is subjected, it is difficult to believe that very much gas, which would be released at the pressure existing in the separator, is still held in solution in the oil. Some slight pressure drop does take place in the separator, but were there any material drop in pressure, the separator would soon freeze up. That this does not take place may be taken as assurance that no material pressure drop takes place within the separator. This is probably the reason why the use of separators frequently results in materially raising the gravity of the oil output. This would not be the case were much dissolved gas released in the separator, since this gas, in passing off would carry with it much condensible liquid.

Bulletins on Oklahoma Geology Offered

Norman, Oklahoma. — Charles N. Gould, Director of the Oklahoma Geological Survey, announces the publication of the following bulletins and circulars. The law requires that these publications be sold and the price, including mailing charges, is attached:

Bulletin 4, Coal in Oklahoma, price 85c. This report has been in preparation for a number of years and includes the geology of the coal fields of Oklahoma. According to the figures of the U. S. Geological Survey, Oklahoma has 79 billion tons of coal. Approximately three million tons per year are being mined. Analyses are given of more than 100 coals from Oklahoma.

Bulletin 40, Oil and Gas in Oklahoma. This bulletin, which will later be bound in book form, is being issued as separate chapters. The price of each separate is 30c. So far the following chapters are available.

Bulletin 40-A, Geology of Woods, Harper, Ellis, Alfalfa, Major and Woodward Counties, Oklahoma.

Bulletin 40-B, Subsurface Geology of Northeastern Oklahoma.

Bulletin 40-C, Geology of Creek County, Oklahoma.

Bulletin 40-D, Subsurface Stratigraphy of Western Oklahoma.

Bulletin 40-E, Geology of Stephens County, Oklahoma.

Bulletin 40-F, Geology and Oil Production of Okmulgee County.

Bulletin 40-G, Petroleum Geology in Oklahoma.

Other chapters of Bulletin 40 will be issued shortly.

Bulletin 41, Upper Paleozoic Rocks of Oklahoma, price 57 cents. This report includes a series of 30 paleographic maps attempting to show the various areas occupied by land and water in the State of Oklahoma during various geologic periods. It will be exceptionally interesting to the oil and gas men, in that it shows the locaiton of former shore lines.

Circular 9, The Sycamore Limestone, price 30 cents. A description of a limestone formation of Mississippian age, outcropping in the Arbuckle Mountains of southern Oklahoma. Heavy mineral determination procedure is explained.

Circular 13, The Permian of Western Oklahoma and the Panhandle of Texas, price 30 cents. A description of the surface and sub-surface formations of western Oklahoma and the region of the Amarillo oil and gas field in the Panhandle of Texas, with maps descriptive of the Anadarko Basin and the buried Amarillo Mountains.

Structure map of northeastern Oklahoma, by W. T. Thom, Jr., showing subsurface contours on Bartlesville, Mississippi lime and Wilcox. No charge.

The colored geologic map of Oklahoma is now available. This map, which is in 20 colors, is one of the best ever issued in the United States. It is not sold in Norman but may be obtained by writing to the U. S. Geological Survey, Washington, D. C. The price is $1.50 (send postal money order.)

Bulletin 35, Index to the Stratigraphy of Oklahoma, 57 cents. The first attempt to index all the stratigraphic formations of the state. It shows nomenclator, type locality, character, thickness, occurrence, age, and correlation; and includes a bibliography of the 125 formations of the state. This is supplemented with a list of characteristic fossils. This publication is a useful handbook to accompany the colored geologic map.

Research Reveals Valuable Facts About Concrete

Cement is fairly uniform in quality, but much is to be gained by observing proper procedure in mixing and curing of concrete

By CLAUDE C. BROWN
Gas Engineer California State Railroad Commission

From derrick foundations to water shut-offs at the bottom of the hole, cement plays a very important part in field development work. Often the success or failure of a drilling venture can be credited to the performance of the concrete used.

A faulty derrick foundation may result in the loss of a rig as well as the hole, not to mention the inestimable damage caused by the delay in completing the well. Even human life has been the price paid for improper foundations that have caused derricks to collapse.

Therefore any information that deals with the proper use or mixing of concrete should be given careful consideration by the industry. The data in the accompanying discussion comes from extensive research work carried on by Mr. Duff A. Abrams to accurately design beforehand mixtures having any predetermined properties of quality and strength.

DURING the last few years a great deal of research work has been done in connection with the study of concrete, notably by the Portland Cement Association and its director of research, Mr. Duff A. Abrams; the Structural Materials Laboratory at Chicago; the Lewis Institute, and others.

Through this research work it has been demonstrated that each ingredient of concrete and the methods used in the proportioning of the various ingredients of the same have a very important bearing upon the strength and quality of the product. These studies have made it possible to accurately design beforehand mixtures having any predetermined properties of quality and strength. This design involves the proper selection and proportioning of available materials to produce a concrete of the required properties with the maximum of economy.

Methods of control have been perfected which insure uniform standards of quality of concrete on the job. These methods have been used in practice on a large number of projects and have proven eminently satisfactory.

Water-Cement Ratio

In times past, many different methods have been used for the proportioning of the various ingredients of concrete, but in none of them was sufficient importance given to the relation between the quantity of cement and the quantity of water used. Comprehensive experiments have indicated the fact that the mixing water is one of the most important ingredients of the mix. Small variations in the water content produce greater variations in the strength and quality of the resulting concrete than do similar variations in any of the other ingredients. However, all of the ingredients—water, sand, gravel, rock and cement—bear important relations to each other and to the strength and quality of the finished concrete.

The water-cement ratio theory is that for any given materials and conditions of handling and mixing, the strength of the resulting concrete is determined by the ratio of the volume of mixing water to the volume of cement so long as the mixture remains workable. This means that if one cubic foot of water is used for each cubic foot of cement in a given mixture, the strength of the concrete at a given age is fixed regardless of what quantities of other materials are used, so long as the mixture is plastic enough to be workable, assuming of course that the materials used are clean and sound.

Less than 2½ gallons of water is sufficient to hydrate one sack of cement. The addition of excess mixing water seems only to dilute the paste formed by the cement and its hydrating water and to reduce the strength of the resultant concrete and make it porous. It is, of course, necessary to add more than 2½ gallons of water per sack of cement in order to receive a workable mix, but the strength of the concrete is reduced in proportion to the amount of water added. Figs. No. 1 and No. 2 are curves showing the relation of this water-concrete ratio to the strength of the resulting concrete. Thus, for given proportions of cement and aggregate, the total quantity of mixing water should be the least amount consistent with workability of the mix In other words, one should use the smallest quantity of mixing water that will give a sufficiently plastic mixture for the work in hand.

In general construction work the maximum strength for given proportions is rarely obtained due to the need of a more workable concrete than that which produces maximum strength. However, by using the minimum amount of mixing water necessary to produce workability, a

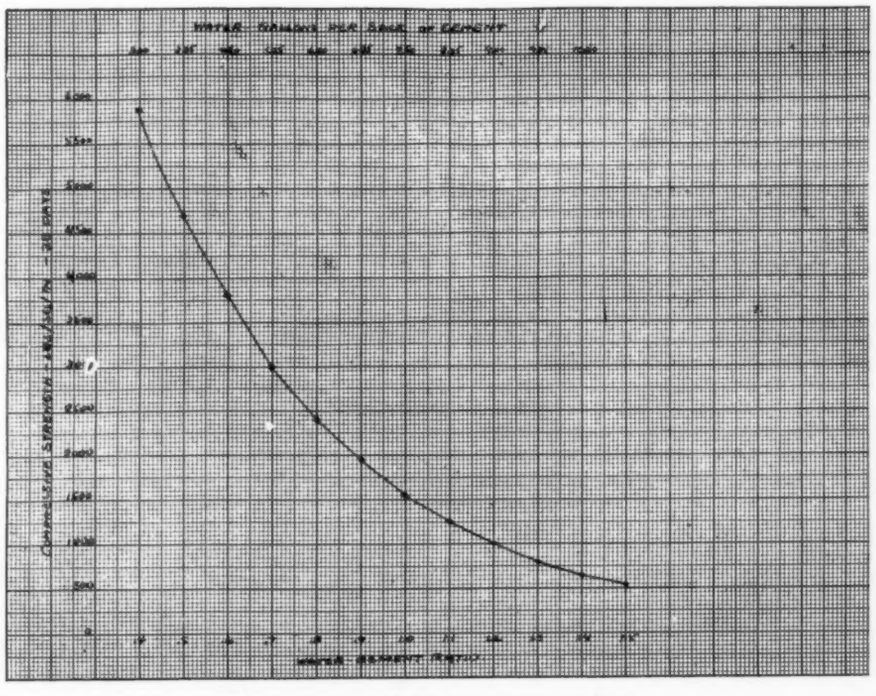


Figure 1.—Showing Water-Cement Ratios.

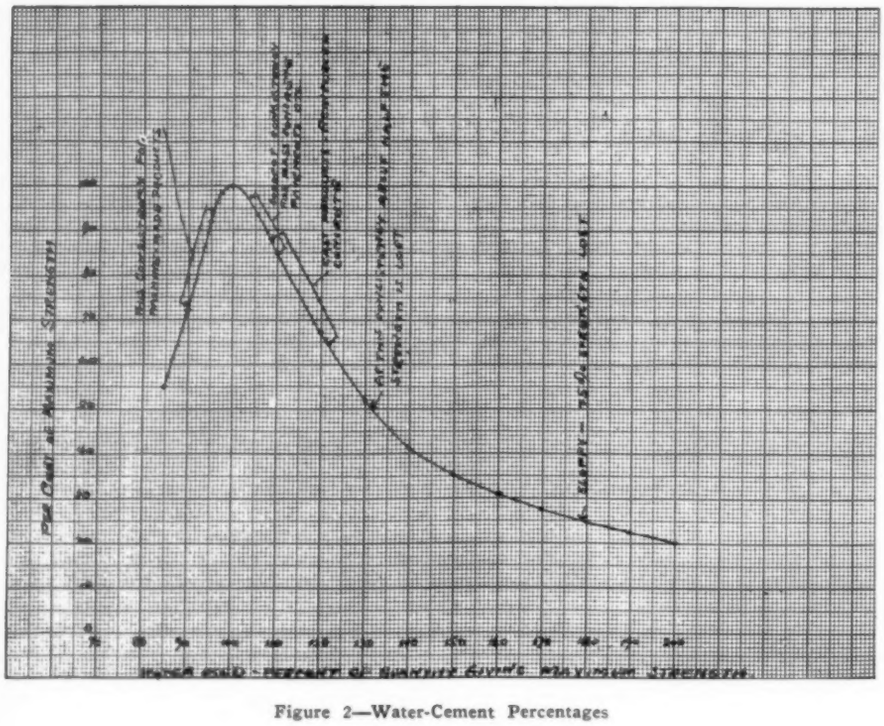


Figure 2—Water-Cement Percentages

high percentage of the maximum strength can be secured, sometimes as high as 90 per cent. Workability can be increased without changing the strength of the mix by adding like volumes of water and cement, thus maintaining a constant water-cement ratio.

The mixing water has two important functions in the mixture of concrete—first to hydrate the cement and second, to produce a workable consistency or lubrication. Rich mixtures require less mixing water per sack of cement than lean mixtures, because the smaller volume of aggregate repuires less mixing water to attain a given consistency or workability.

Consistency of Mixture

Mixtures for reinforced concrete must usually be more plastic than for mass concrete or for pavements. Hence, more mixing water is needed and the required strength can be obtained only by using more cement. Therefore, it is economical to limit the quantity of mixing water to the smallest possible amount.

The consistency to be used depends upon the nature of the work. For mass work, sidewalks and pavements, the mixture can be fairly stiff. For reinforced concrete floors the consistency must be somewhat more plastic so that the concrete can be worked into place around the steel without difficulty, and so that it will effect a bond with the reinforcing steel. For thin reinforced walls the mixture must be even more thin. For all work, however, the consistency should be as stiff as possible. Extremely wet and thin mixtures should never be used.

Cement

The quality of the Portland cement which is furnished today has been practically standardized so that there is not a great deal of choice in the selection of cement. This ingredient of concrete comprises from 15 per cent to 25 per cent of the volume of the concrete, while the aggregates—sand, gravel and rock—comprise the remaining 75 per cent to 85 per cent.

Sand

The important characteristics of sand for use in the preparation of concrete are cleanliness, durability or soundness, and grading. Experience has shown that the physical appearance of a sand is not a safe criterion for determining its suitability for use in concrete. A sand that appears dirty may be entirely free from organic impurities and give excellent results in concrete mixtures provided it is durable and sound and evenly graded. On the other hand, many sands may appear to be clean and still be coated with organic impurities of such a nature that the use of such sand would result in a very inferior quality of concrete.

Experimental work carried out in the Structural Materials Research Laboratory, Chicago, by Professor Duff A. Abrams in charge, and Dr. Oscar E. Harder, chemist, has shown that it is the presence of organic impurities of a humus nature that is responsible for the effects to be observed from using sand of this nature. Another factor which produces detrimental effect in some sands is the presence of an excessive amount of silt.

The presence of organic impurities in the sand produces a decidedly injurious effect in retarding or preventing the hydration, setting and hardening of the cement, and every precaution should be taken to see that such impurities do not exist in the sand.

A field test for the presence of organic impurities in sand consists in shaking a sample of the sand thoroughly in a dilute solution of sodium hydroxide (Na OH) and observing the resultant color after the mixture has been allowed to stand for a few hours. In this test use may be made of a 12 ounce bottle filled to 4½ ounces with sand, and 3 per cent solution of NaOH added to 7 ounces. If at the end of 24 hours the solution resulting is colorless, or a light yellowish color, the sand may be considered as satisfactory for use. If the solution is dark in color, the sand should not be used.

Coarser Aggregates

As setated above, aggregate may consist of 75 per cent to 85 per cent of the volume of the concrete. Aggregates should be clean, free from coatings, or organic impurities, and structurally sound. The proper sizing and grading of aggregates or proper proportioning of fine and coarse aggregates may double the strength of the concrete. Any number of fine and

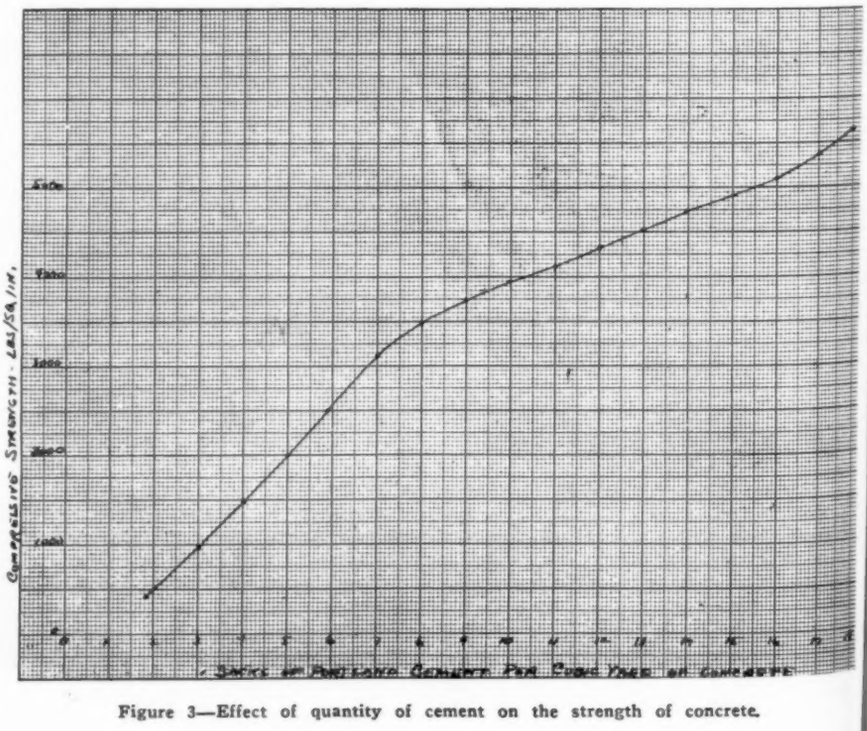


Figure 3—Effect of quantity of cement on the strength of concrete.

coarse aggregates of unduly different size and grading may meet the usual specifications in those respects. If combined in arbitrary proportions, such as 1:2:4, some of them will make far better concrete than others. For best results, a proportion should be determined for each case which will fit the particular aggregates to be used.

Assuming a given consistency which should always be as stiff as the nature of the work permits and a given mix (proportion of cement to total volume of mixed aggregate) the strength of resulting concrete depends upon the size and grading of the aggregate. In general, the larger and coarser the aggregate, the stronger will be the concrete. Coarse sand will produce stronger concrete than fine sand, while stone or pebbles in which the larger sizes predominate, will produce a stronger concrete than smaller stones or pebbles.

Effect of Rich Mixtures

The aggregate is the inert portion of the concrete, and the latter hardens, or sets, because of the chemical reaction or hydration of the cement by the mixing water. As stated heretofore, the quantity of mixing water and the quantity of cement both affect the strength of the concrete. In fact the controlling factor in strength is the ratio between the volume of mixing water and the volume of cement. As long as the mixture is workable, the lower the water-cement ratio the stronger will be the concrete. This ratio can be reduced in three ways:

1. By reducing the quantity of mixing water.
2. By improving the grading of the aggregate.
3. By using more cement—a richer mix.

Improved, or more uniform grading reduces the quantity of the mixing water necessary to obtain a given consistency. Larger, better graded particles find their way into place more easily and require less mixing water. In general, coarse sand and large pebbles require less mixing water than fine sand and small pebbles.

An increase in the amount of cement used reduces the water-cement ratio because a rich mix will attain a given consistency with less mixing water per sack of cement than a lean mix. If less mixing water per sack of cement is not used with a richer mix the value of the additional cement will be lost.

The effect of quantity of cement on the strength of concrete is shown in the following table:

True Mix	Approx. Nominal Mix	Sacks of cement per cu. yd. of concrete	Compression strength lbs. per sq. in., 28 days
NEAT	.....	29.7	6630
1-½	.....	23.0	5720
1-1	1-¾-¾	15.7	5070
1-2	1-¾-1½	10.5	4070
1-3	1-1½-2	7.9	3570
1-4	1-1½-3	6.3	2760
1-5	1-2-3½	5.2	2090
1-7	1-3-5	3.9	1400
1-9	1-3½-7	3.1	1030
1-15	1-6-12	1.8	440

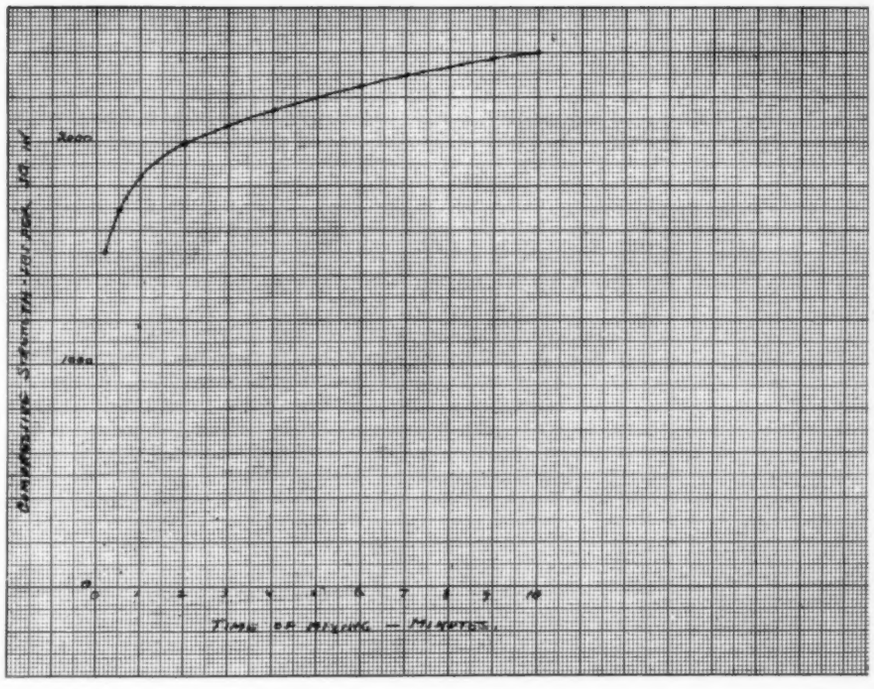


Figure 4—Time of mixing.

Fig. 3 is a curve showing the effect of quantity of cement on the strength of the concrete. The richer the mixture the more impermeable the concrete. A porous concrete may be injured by frost, may allow objectionable leakage, or may permit moisture to reach reinforcing steel and cause corrosion with consequent spalling and damage.

Water Tight Concrete

Concrete made from properly selected aggregates combined with Portland cement in suitable proportions when thoroughly mixed to the proper consistency, carefully placed and adequately protected during early hardening, will be water tight under all ordinary conditions.

In order to make water tight concrete the following conditions should be observed:

1. All portions of the structure should be strong enough to resist the head of water either internal or external, to which the concrete may be subjected.
2. Use clean, well graded aggregates.
3. Use relatively rich mixture, such as 1:2:3 or 1:1½:3.
4. Use minimum amount of mixing water that will give workable plastic consistency; not over 6 gallons per sack of cement.
5. Mix the concrete at least 1½ minutes after all materials are in the mixer.
6. Place the concrete carefully in layers 6 to 12 inches deep, spading or rod-

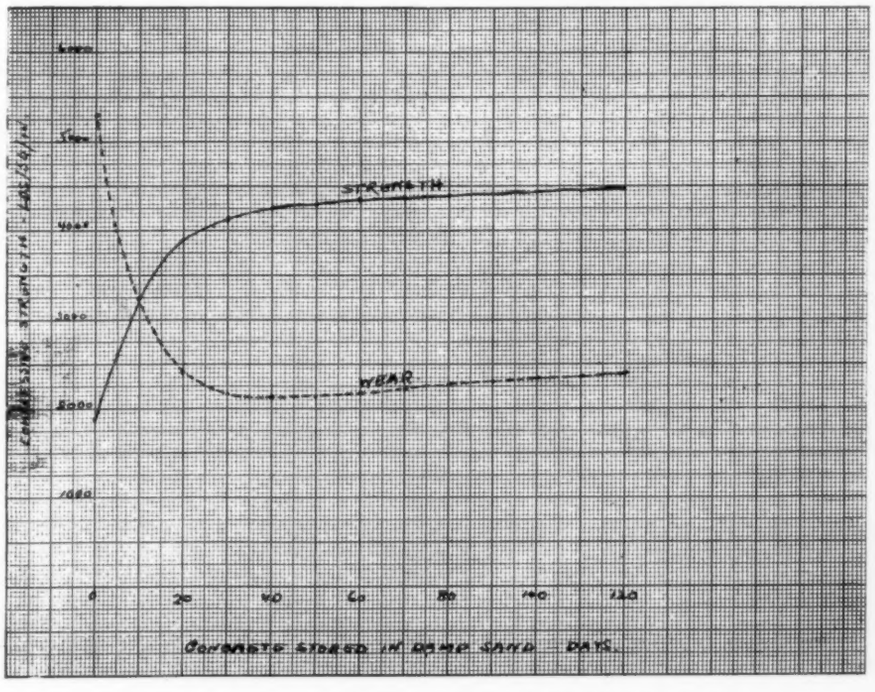


Figure 5—Effect of curing of concrete on strength and wearing quality.

ding it thoroughly to prevent the formation of stone pockets, or voids.

7. If possible, place the concrete in one continuous operation to avoid construction joints. If placing is interrupted, be sure to get a good bond between the fresh concrete and that placed previously.

8. Keep the concrete warm and damp for the first ten days.

Hundreds of concrete tanks are being used for the storage of fuel oil, which is lighter than water and much harder to hold. These tanks are oil tight and of course water tight. Concrete basements, pits, bridges, and tanks will also be water tight if proper care is taken in the construction.

Thorough Mixing

Concrete should be thoroughly mixed. If this is not done the product will not be uniform in quality, and is likely to contain stone pockets or voids which are weak spots, and which may permit objectionable leakage.

The time of mixing materially affects the strength of concrete. Concrete mixed for two minutes is 20 to 35 per cent stronger than that mixed for only fifteen seconds, and is from 500 to 700 pounds per spuare inch stronger than the former at all ages.

Thorough mixing gives increased plasticity. Mixing for five minutes gives the best results, and no concrete should be mixed less than two minutes. Figure 4 shows the effect of thorough mixing.

Proper Curing Increases Strength

Concrete hardens because of chemical reactions between the Portland cement and the mixing water. Down to an amount less than can be used in construction work, the smaller the amount of mixing water the stronger will be the concrete. However, once the concrete is placed and set, conditions change and ample curing water should be provided.

of concrete are slow, and if sufficient moisture is not present, they cannot be completed. The mixing water essential to proper hardening, if freshly placed concrete, is often lost by absorption or evaporation, even after the concrete has begun to harden. Under such conditions, concrete attains only part of its potential strength. Therefore, the water content of freshly placed concrete should be conserved. Keeping concrete damp during its early hardening period, or in other words, providing plenty of curing water, prevents evaporation of necessary moisture.

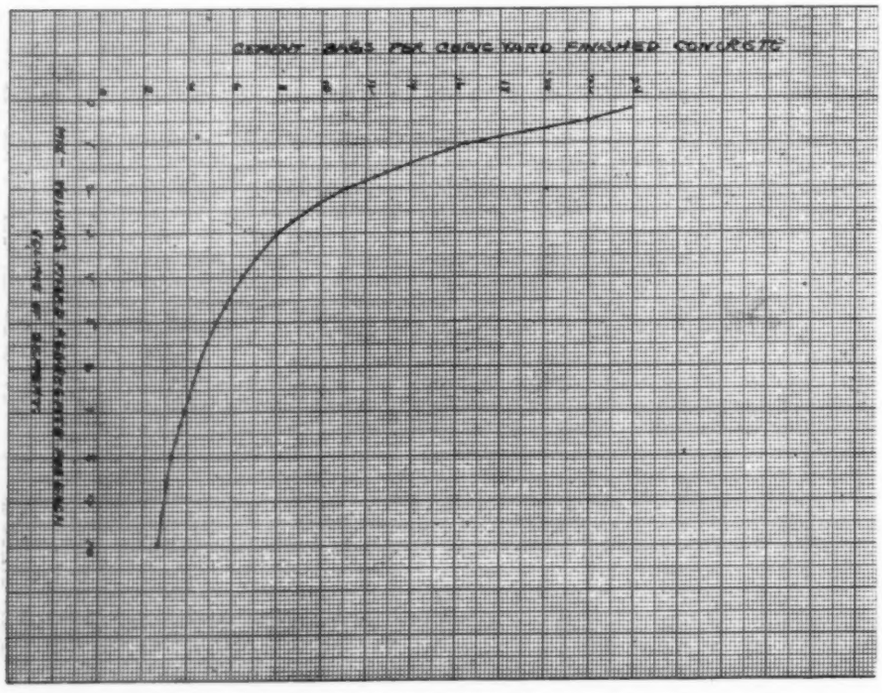
Protection during the early hardening period greatly increases the strength and resistance to wear of concrete.

Figure 5 shows the effect of such protection. Keeping the concrete damp for the first ten days increases its compressive strength 75 per cent; for three weeks, 115 per cent; and for four months 145 per cent.

Freshly placed concrete can be kept damp in several ways. Drenching the sub-base forms with water before concrete is placed will reduce absorption. Horizontal surfaces, such as floors and pavements, can be covered with damp sand the day after they are laid, when they have hardened sufficiently to prevent pitting the surface, and kept damp by frequent sprinkling. Sometimes small ditches of clay are built around a section of floor, or pavements, which is then flooded with water. Vertical surfaces can be kept damp by frequent sprinkling of the forms, or exposed concrete. Sometimes walls are covered with canvas, or burlap, which is drenched with water several times a day.

Keeping concrete damp for the first ten days will give the owner over 65 per cent better value for his money. Three weeks' protection will give still greater increase in value. There is nothing that can be done to concrete that will pay such big dividends in better concrete than proper use of water in mixing and curing.

The chemical reactions of the hardening



Curve showing relation between cement and aggregates for one yard of concrete.

Senate Wants Data On Mexican Oil Muddle

Washington, D. C.—Full information regarding American oil holdings in Mexico is sought of the Secretary of State by the Senate in a resolution adopted February 3. The resolution was introduced by Senator Norris of Nebraska, and was adopted without any debate.

The measure calls upon the Secretary of State to report to the Senate "if not incompatible with the public interest":

"The names of American individuals and American corporations owning or claiming oil lands or oil concessions in Mexico alleged to have been acquired prior to May 1, 1917; and if the names of all such persons and corporations are not known to the department, then give the names of those that are known.

"What individuals or corporations, foreign to Mexico, if any, have accepted the law or constitution of Mexico relating to oil lands and oil concessions or titles based upon rights acquired prior to May 1, 1917.

"The names of American persons or corporations so owning or claiming oil lands or concessions in Mexico that have refused to accept the Mexican law or constitution applying to such concessions.

"Has the department given any advice or instructions to any of such American persons or corporations; and if so, what instruction or advice has been given?

"Supply the Senate with copies of all correspondence between the department, or any of its officials, and any of such persons or corporations so owning or claiming oil lands or oil concessions in Mexico."

Wants Oil Suits Funds Kept on Tap

Washington, D. C. — Continuation during the coming fiscal year of the unexpended balance of the appropriation of $100,000 made July 3, 1926, to enable the President to continue the litigation to cancel the Sinclair and Doheny oil leases, was recommended to the House of Representatives February 1 in a message from the President.

In a report from the Director of the Bureau of the Budget, accompanying the President's message, it is stated that the litigation cannot be completed during the current fiscal year, which ends June 30, and it will be necessary, therefore, to have funds for the cases after that date. The unexpended balance of the appropriation is not stated, but it is believed to be sufficient for carrying the cases through to completion.

L. P. St. Clair, vice-president of the Union Oil Company, Los Angeles, has returned from a business trip in the East.

An Extra-Powerful Tool Joint Tong

STRENGTH—insuring safety of man and ability to do the work—is the outstanding attribute of the GUIBERSON Tool Joint Tong. This tong has only 5 main parts—frame—yoke—handle—latch—cam die. Each of these parts is massive and powerful. Tong breakage is ancient history, with users of GUIBERSONS.

This tong is simple and speedy in operation. A thrust takes hold—a stroke on the latch lets go. It is instantly reversible. It offers maximum take-up for worn down joints. It is growing steadily in popularity, year by year.

THE GUIBERSON CORPORATION

Box 1106, Dallas, Texas

CALIFORNIA BRANCH: 1506 Santa Fe Ave., Los Angeles

402 W. First St., TULSA

506 Trust Bldg., NEWARK, O.

"Better Be Safe Than Sorry"

GUIBERSON

BETTER BE SAFE THAN SORRY

Raccoon Bend, New Austin County Gas Area, Will Have Extensive Play Immediately

Houston.—Raccoon Bend field, Austin County, which was opened February 3 by completion of the Walton No. 1 well of the Humble Oil & Refining Company, Valley Oil Company, which is owned principally by Henry Staiti, and Harry Pennington, independent operator, for several million feet of dry gas from a total depth of 1032 feet, is scheduled for considerable play in the immediate future. Three rigs of joint interests are now busy and three International derricks were shipped Tuesday from Houston by truck to be set over new locations, which have not as yet been announced.

The Walton No. 1 has been capped for the purpose of deepening for prospects of oil lower in the sand. Casing is being cut out of the Austin College No. 1 well, which blew out at 1038 feet and which later made fresh water when the packer failed to hold as the well was being tested.

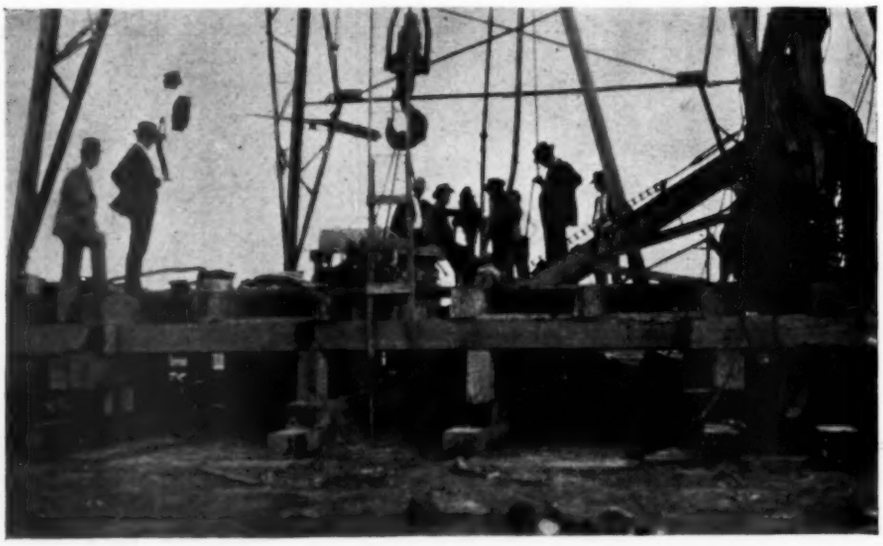
The Bellville School Land No. 1, latest well to be spudded in the vicinity of the producer, struck gas strong enough for a slight blowout at around 450 and 650 feet. Early this week the well was below 700 feet. It is located approximately 2500 feet east of the west line and 150 feet south of the north line of a 200-acre tract owned in fee by the Bellville school.

The Raccoon Bend field is approximately 12 miles due east of the town of Bellville, near the Bellville-Hempstead road, and is bordered on the west side by Ives Creek.

R. E. Graves and associates' No. 1 Cleveland, located in the southern edge of a 4000-acre block on Hickory Mound, about six and one-half miles northwest of the Raccoon Bend area, has encountered a strong gas sand at 870 feet, and is waiting on casing to set over this sand for a test. Gas strong enough to lift the mud over the casing head was encountered in Cleveland No. 1 at 640 and at 772 feet. After the 772-foot gas show the drill penetrated a trick stratum of gumbo before entering the sand at 772 feet.

There is no possibility of competitive drilling at Raccoon Bend due to the 30,000-acre tract covering all the probable productive area along Ives Creek. This block was originally leased by Harry Pennington, who later sold the Humble and Valley Oil Company their interests.

Walton No. 1, discovery well at Raccoon Bend field, Austin County, completed February 3 for several million cubic feet of dry gas from 1032 feet. This well was drilled by the Humble Oil & Refining Company, Valley Oil Company and Harry Pennington, independent operator on a 30,000-acre block originally blocked by Pennington.



Bellville School No. 1 at Raccoon Bend, Austin County, being drilled by the Humble, Valley Oil Company and Harry Pennington. Strong gas was encountered late last week at 450 and 650 feet.

Start Work on Magnolia Gas Line February 15

Dallas, Texas.—Actual construction work on the Magnolia Gas Company's recently announced gas line from Latex Station, located near DeBerry, in northeast Texas, to Dallas and Fort Worth will be started February 15, and it is planned to have the line in operation by July 1, 1927. This will be made up of 14-17-18-inch combination welded pipe, and will be approximately 198 miles in length.

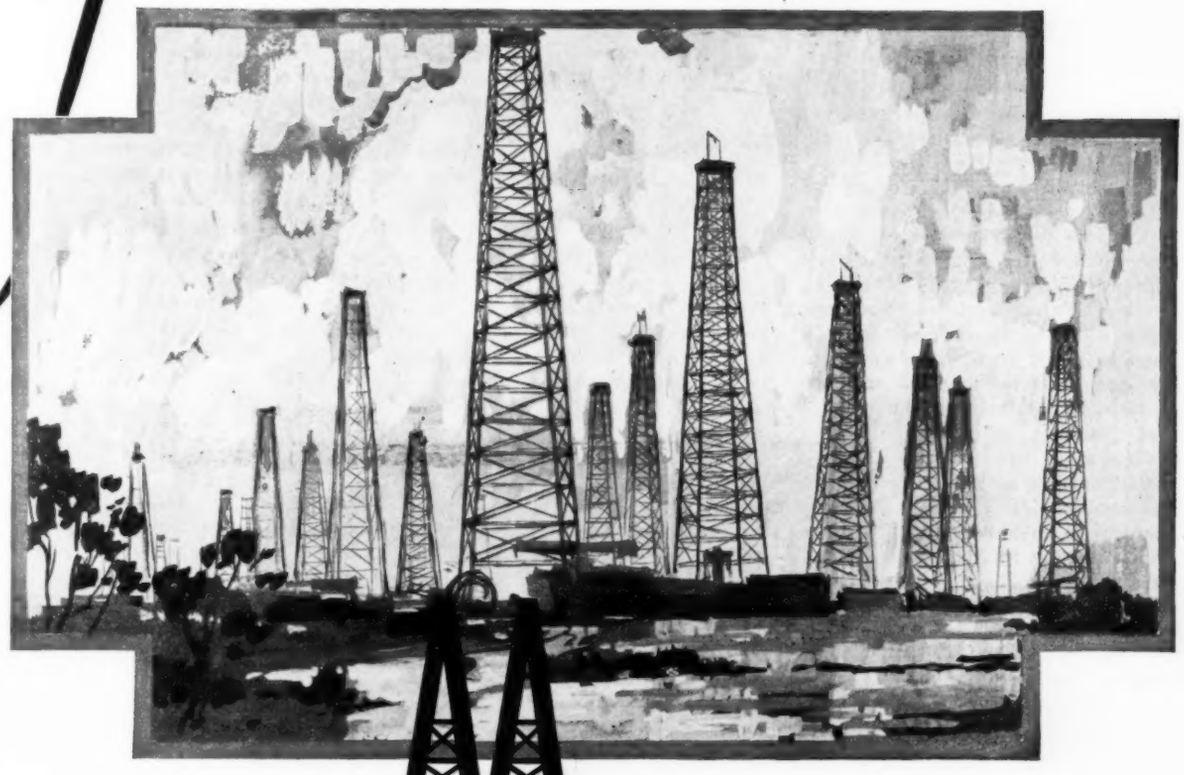
The pipe for this line is now enroute from the Eastern mills, and the first gang of welders will work westward from Latex, while it is planned to add a welding gang each week after the work is started until seven gangs are in action at various points along the route. Skilled workmen for recruiting these gangs will be available from the welding forces of the Magnolia Pipe Line Company, which is building a 10-inch crude line jointly with the Gulf Pipe Line Company from Eastland County to the Panhandle. The work on the crude line by Magnolia will be far enough along in March to release a few gangs for service on the gas line.

A booster station is being erected by the Magnolia Gas Company at Latex, and a second station will be set up at Mineola, Wood County, with both using Cooper engines. The 14-inch pipe will be used on the trunk line in leading out from the stations, while the 16- and 18-inch sizes will follow in the order named. This telescope fashion of arranging the sizes of pipe was also used on the Magnolia Gas Company's 215 miles of 14-16-18-inch line from Northeast Texas and North Louisiana fields via Latex station to Beaumont.

Plan Opening Refinery at Thermopolis

Casper, Wyo.—Production from the Warm Springs field may find an immediate outlet if plans for the operation of the old Alliance Oil & Refining Company's refinery at Thermopolis materialize. The refinery has been shut down for more than three years. Plans are also under way to build a pipe line from the Black Mountain field to Thermopolis. Running at full capacity, the refinery would almost take care of the production from both the Warm Springs and Black Mountain fields.

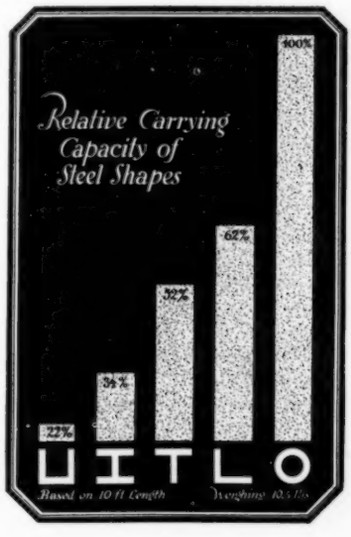
Greatest in Number



Moore
TUBULAR STEEL DERRICKS

MORE Moore Tubular Steel Derricks have been made and sold than all other steel derricks combined. Moore is the steel derrick pioneer, known and used since 1907, in every oil field where modern drilling methods are employed.

Extraordinary drilling conditions are overcome by ***ordinary*** Moore performance, because the Moore Tubular Steel Derrick is an engineering job in which every element of stress and strain has been practically and scientifically anticipated.



With the Moore you can always face ***uncertain*** drilling conditions with mathematical ***certainty.***

"Serving the oil fields of the world for twenty years"

LEE·C·MOORE & COMPANY, Inc. PITTSBURGH·PA·

Say you saw it in The OIL WEEKLY

PERSONAL MENTION-MEN YOU KNOW

Frank M. Brewster, who for several years has been with the U. S. Bureau of Mines in various capacities, has joined the Petroleum Reclamation Company. He is a graduate in Mechanical Engineering from the University of West Virginia. He worked for the Hope Natural Gas Company in West Virginia for several years as an engineer foreman and later as district superintendent, in charge of drilling and production of both oil and gas. He joined the Bureau of Mines in 1923, and was assigned to drilling and producing operations on Government lands in southern Wyoming. Later he was transferred to the Taft, California, station as deputy supervisor of the Pacific Coast district. He was then moved to Ardmore, Oklahoma, and later to Muskogee in charge of Indian lands where he remained until transferred to Washington in August, 1925, as assistant petroleum engineer of the Bureau.

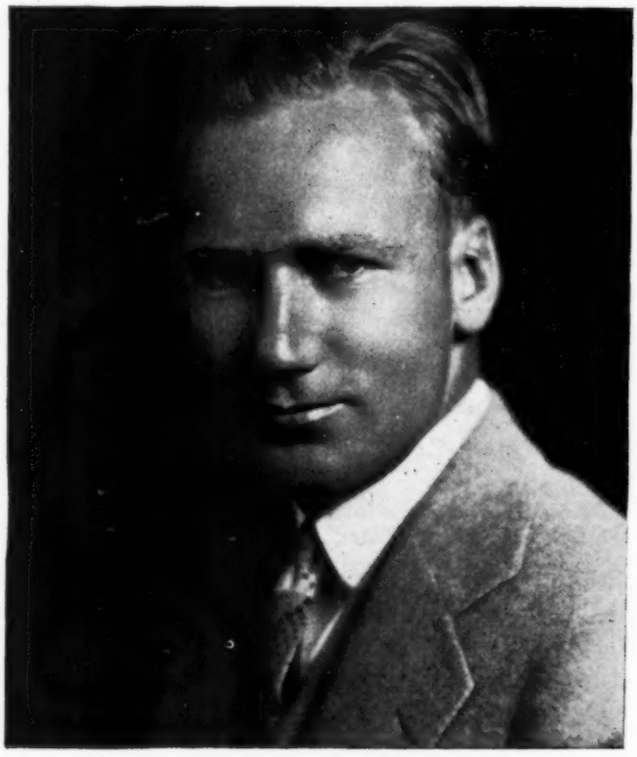
J. A. Morehouse, formerly located in the Gulf Coast territory in charge of the oil and gas division of the Texas Railroad Commission, headquarters at Houston, has been transferred to San Angelo to have charge of that district of West Texas. He has been succeeded in the Coastal section by Goodson H. Rieger, whose headquarters will be at 2115 Elmen Street, Houston, telephone Hadley 1096.

W. L. Barbe, Jr., who has been connected with the geophysical department of the Gulf for several months in the Texas Gulf Coast, has gone with the Vacuum Oil Company scouting department, and will be located in the Gainesville, (Cooke County) Texas district. Bob Moore, assistant manager of Vacuum's land department, left Houston early this week with Barbe to place him in the Gainesville territory. Barbe is a graduate of the Cumberland Law School in Tennessee. He is the son of W. L. Barbe, independent operator in the Gulf Coast.

H. R. Hamilton, formerly scout with the Shell Company of California, Los Angeles, has resigned that position to become associated with the California Petroleum Corporation in the same capacity.

Mrs. E. A. McPherson, wife of Texas' well known pipe line builder, died January 31 in Fort Worth. Mr. McPherson was the builder of the Houston Pipe Line Company's South Texas gas line, while his company has laid many of the largest lines in the South under contract.

L. S. Allen, district manager of the Central Alloy Steel Corporation, has returned to his offices in Tulsa after an extensive field trip through North and Central Texas in the interest of company business.



W. L. STEWART, JR.

W. L. Stewart, Jr., grandson of Lyman Stewart, founder of the Union Oil Company of California, U. S. A., and son of W. L. Stewart, Sr., present head of the organization. W. L. Stewart, Jr., recently was elected a member of the board of directors of the Union to fill the vacancy occasioned by the death last June of C. W. Ralph, director of sales and transportation.

Dorsey Hager returned last week to Texas and will make his headquarters in Amarillo. He has spent the past three years in Washington and Montana, geologizing vast stretches of land, and has more than a dozen structures to his credit in the two states.

Mrs. M. T. Fauts, mother of Carl Fauts, scout for Vacuum Oil Company in the Texas Gulf Coast, and Henry Fauts, representative of the J. S. Abercrombie Compnay, died at her home in Cleveland, Tennessee, February 2, after an illness that lasted more than a month. Both of the sons had returned to Houston recently after spending two weeks at their mother's bedside.

C. C. Toomey, assistant chief geologist of the Skelly Oil Company in Tulsa, effective February 1, has become associated with C. J. Wrightsman of Tulsa, independent oil producer, as executive assistant to Mr. Wrightsman.

Harry Pennington, mechanical engineer and independent wildcat operator in the Gulf Coast and Southwest Texas territory, spent the past week in Houston. Pennington is credited with having blocked the 30,000-acre tract in which Raccoon Bend field was opened last week in Austin County, and still maintains a quarter interest in the leases and operations.

Charlie Lane, of the Border Research Corporation, Houston headquarters, left late last week for a trip through Southern Louisiana where his concern has six wildcat tests running. The Border Research has approximately 2,000,000 acres under control in the Louisiana coastal territory, including fee acreage and State water leases. All of the present wildcat operations are in lakes.

James W. Rich, independent wildcatter in the Texas Gulf Coast, returned recently to his Houston office after a trip through Brazoria and Wharton Counties. Mr. Rich is the organizer of the Dome Development Company, which has for two years been doing drilling around coastal domes. He now has a wildcat shutdown at 2000 feet five miles west of Wharton, which he plans to deepen, and he has plans now under way for drilling more than a half dozen shallow tests within the coming year.

J. C. Myers, engineer for Roxana in the Gulf Coast territory, has returned to Houston headquarters after a trip through Southern Louisiana.

CLIMAX

Trade Mark Reg. U. S. Pat. Off.

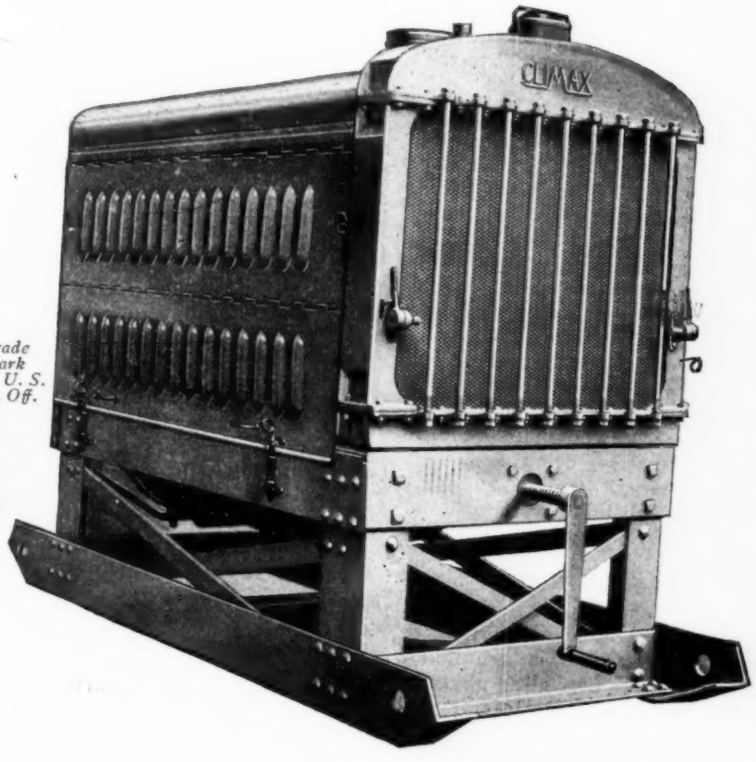
Announces the Appointment of

THE NATIONAL SUPPLY COMPANIES

as distributors of

CLIMAX Trade Mark Reg. U. S. Pat. Off.

ENGINES



CLIMAX ENGINEERING CO.

CLINTON, IOWA

Say you saw it in The OIL WEEKLY

C. M. Abercrombie Back From South America

C. M. Abercrombie, who has been representing the J. S. Abercrombie Drilling Company in Colombia, South America, since June, 1926, has returned to Houston, and will be placed in charge of some of the company's work in the Coastal region. He has been working with the company in various fields since 1916, with the exception of time spent in Texas A. & M. College, where he took a course in Mechancial engineering.

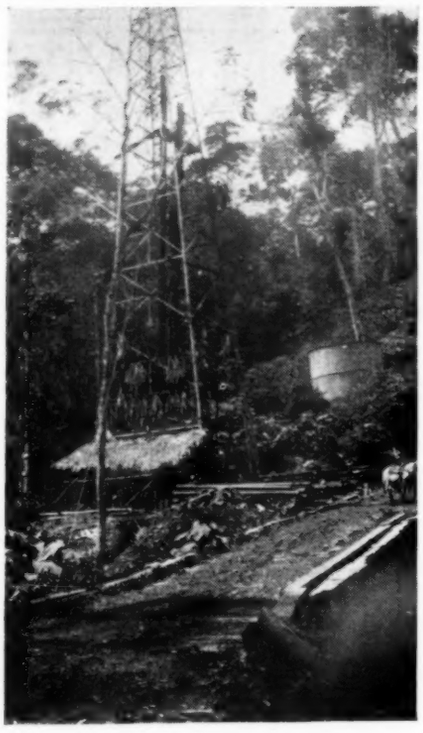
The Abercrombie Drilling Company is now running two rigs at Lemon, Colombia, drilling for the Kelley Oil Company. These tests are among the rankest wildcat projects now under way in any country, located approximately 180 miles from Cartagena port on the Colombian coast. Fuel and equipment are moved to Lemon via, boat 150 miles through the Caribbean Sea, and then 32 miles by road, which was built by the operators. Fuel is obtained from the Tropical Oil Company in Cartagena. Both of the wells are now drilling at around 1500 feet in black shale formation, and both have had gas shows at several depths. Drilling at this point is unusually difficult due to heaving shale, aside from the difficulty in transporting equipment to the location.

The accompanying photograph taken by Mr. Abercrombie recently gives an idea of the dense jungle in the vicinity of the wildcats. The locations were made from surface indications, numerous gas seeps being present. The wooded country surrounding Lemon is infested with practically every variety of animal common in South America, and Abercrombie admits that wild monkeys serve as first class alarm clocks among the Lemon townspepole and whites located there. All helpers on the wells are natives, mainly of Indian blood, the natives being used even as firemen. "Hoss" Wilkin and Bill Howard, both well known through the Louisiana Gulf Coast, are drillers on the wells.

The Abercrombie Drilling Company operations at Lemon present a perfect example of progressive and modern wildcatting. A hospital is maintained at the camp with a first class physcian in charge. A caterpillar tractor and several trucks are used by the company in moving fuel and equipment to the camp over the 32 miles of well constructed road. Steel derricks are used on the tests.

According to young Abercrombie, the undesirable climate offers the greatest opposition to steady work at Lemon. The rainfall there averages around 300 inches annually, most of which falls between May and December. Operations are shutdown much during this time due to heavy rains.

Natives in the Lemon vicinity are very docile and give practically no trouble to foreign operators. The population of approximately 150 persons in the little Lemon settlement have made life pleasant for the white operators since the drilling project was started.



One of the world's rankest wildcats, now being drilled under contract by the J. S. Abercrombie Drilling Company of Houston, for the Kelley Oil Company at Lemon (Colombia), South America. Cartagena, the nearest town of appreciable size, is 182 miles away.

Oklahoma Tax Question Is Up Again

Tulsa, Oklahoma.—The oil industry of Oklahoma is again opposing higher taxation. Now pending before the legislature at Oklahoma City is a measure which would increase the gross production tax from 3 to 5 per cent.

This bill has been set for hearing February 14, before the Revenue and Taxation Committee of the House, where the measure was introduced.

This hearing is expected to draw scores of oil producers and land owners to Oklahoma City for that date. Expressions within the industry are to the effect that such an increase in gross production tax would result in hampering even wildcat drilling.

Montana Legislation Is Causing Concern

Helena, Mont.—The recent action of some of the State officials, who are in favor of the State engaging in the refining and marketing of petroleum products, has thrown the industry in a virtual state of turmoil—especially the refining department. The legislature is now in session and the bill has been introduced. No definite action has been taken, however.

Want Junior Petroleum Technologist

Applications for junior petroleum technologist must be on file at Washington, D. C., not later than March 12. The date for assembling of compteitors will be stated on their admission cards and will be about ten days after the close of receipt of applications.

The examination is to fill vacancies in the Geological Survey, and in various other branches of the service.

The entrance salary in the District of Columbia is $1,860 a year. After the probational period required by the civil service act and rules, advancement in pay depends upon individual efficiency, increased usefulness, and the occurrence of vacancies in higher positions. For appointment outside of Washington, D. C., the salary will be approximately the same.

The duties of this position in the Geological Survey will include the inspection and supervision, under general direction, of all operations connected with the production of petroleum and natural gas, the protection of productive formulations, the prevention of economic waste, the preparation of maps, and the writing of reports.

Competitors will be rated on general chemistry and elementary physics, mathematics up to and including calculus, and practical questions on petroleum technology.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.

La Barge Area Becoming Active

Casper, Wyo.—New locations are being made in the La Barge field at a rapid rate. Leasing activities in and near the field are greater than in any other location in the State. Several plans have been drawn for pipe lines from the field to some point on the Union Pacific railroad. The California Company is extensively interested in production and probably will help to build a pipe line from the field. Several small towns along the Union Pacific railroad have taken on the appearance of real boom towns. There is every reason to believe, however, that spring operations will make the field the most active in the state.

A. M. Cannan of the Border Research Corporation and formerly assistant to manager of the Humble Oil & Refining Company land department, has about given up his chief sport, basket ball, since the arrival of a baby daughter, Dorothy Ann. He thinks most of his time will be taken up rolling rubber balls. Cannan has been one of the star forwards on the Houston Triangles team for more than a year.

Boys Abroad Hollering For W-K-M Swabs

Exceptionally long life of special rubbers, and remarkable results achieved with W-K-M Swabs, has created a world-wide demand for them.

The boys abroad are certainly hollering for W-K-M Swabs, and no mistake about it.

A lot of them haven't been home since the first W-K-M Swab was introduced about six months ago, and consequently haven't seen one, but they are requisitioning them every day, and in constantly increasing quantities.

Three days ago, for instance, the mail brought us orders for six swabs of various sizes for export. The following day, orders for three more. Yesterday, no orders. But this morning, however, an inquiry is in for prices and delivery date on 30 (thirty) W-K-M Swabs, in all sizes from 2-inch tubing swabs to 8¼-inch casing swabs. And so it goes.

Probably the fact that W-K-M Swabs are equipped with special rubbers, some of which have withstood as many as 300 hours of constant swabbing, has something to do with this increasing demand from the boys abroad. Good news spreads fast, you know.

It is possible, too, that the swivel feature of the W-K-M Swab, which saves much of the wear on wire lines; or the internal expansion feature; or the automatic unloading feature; or the quick rubber change feature; or all of them combined, is influencing the style in swabs abroad this year.

But whatever it is, W-K-M Company welcomes the business and guarantees to all the boys, wherever they may be, that W-K-M Swabs will continue to measure up to the same high standards of quality that characterizes all W-K-M products.

Sold through all oil field Supply Houses

W-K-M Company, Inc.

Houston -:- Texas

Send For Special Folder

W-K-M Company, Inc.
Houston, Texas.

Gentlemen:—Without obligation to me, you may send your Swab pamphlet to the address below.

Name . . . . . .

Street . . . . . .

City . . . . . .

State . . . . . .

CRUDE OIL PRICE QUOTATIONS

Current Postings

EASTERN STATES

	Feb. 9 1927
New York Transit	$3.30
Bradford District	3.40
National Transit	3.30
Southwest	3.30
Eureka	3.25
Buckeye	3.10
Macksburg	3.05
Gaines	2.85
Somerset	2.20
Cabell	2.10
Ragland	.95
Corning	2.25
Keister	1.80

CENTRAL STATES

Illinois	2.10
Indiana	1.98
Lima	2.21
Plymouth	1.63
Princeton	2.10
Waterloo	1.35
Wooster	2.25

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren, Cumberland and Monroe Counties

All grades	2.20

MID-CONTINENT

Prairie, Sinclair, Gulf, Texas and Magnolia

	Feb. 9 1927
Below 28 (Magnolia only)	1.30
28 to 28.9 gravity	1.50
29 to 29.9 gravity	1.55
30 to 30.9 gravity	1.60
31 to 31.9 gravity	1.65
32 to 32.9 gravity	1.70
33 to 33.9 gravity	1.75
34 to 34.9 gravity	1.80
35 to 35.9 gravity	1.85
36 to 36.9 gravity	1.90
37 to 37.9 gravity	1.95
38 to 38.9 gravity	2.00
39 to 39.9 gravity	2.05
40 to 40.9 gravity	2.10
41 to 41.9 gravity	2.15
42 to 42.9 gravity	2.20
43 to 43.9 gravity	2.25
44 to 44.9 gravity	2.30
45 to 45.9 gravity	2.35
46 to 46.9 gravity	2.40
47 to 47.9 gravity	2.45
48 to 48.9 gravity	2.50
49 to 49.9 gravity	2.55
50 to 50.9 gravity	2.60
51 to 51.9 gravity	2.65
52 and above	2.70

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran, Somerset, Big Lake and Nocona crude

Humble O. & R. Co.* and Texas Co.

	Feb. 9 1927
Below 28**	1.40
28 to 28.9 gravity	1.50
29 to 29.9 gravity	1.55
30 to 30.9 gravity	1.60
31 to 31.9 gravity	1.65
32 to 32.9 gravity	1.70
33 to 33.9 gravity	1.75
34 to 34.9 gravity	1.80
35 to 35.9 gravity	1.85
36 to 36.9 gravity	1.90
37 to 37.9 gravity	1.95
38 to 38.9 gravity	2.00
39 to 39.9 gravity	2.05
40 to 40.9 gravity	2.10
41 to 41.9 gravity	2.15
42 to 42.9 gravity	2.20
43 to 43.9 gravity	2.25
44 to 44.9 gravity	2.30
45 to 45.9 gravity	2.35
46 to 46.9 gravity	2.40
47 to 47.9 gravity	2.45
48 to 48.9 gravity	2.50
49 to 49.9 gravity	2.55
50 to 50.9 gravity	2.60
51 to 51.9 gravity	2.65
52 and above	2.70

Corsicana Heavy $1.25 per barrel, posted by Magnolia.

*Until further notice, Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes purchased by the Humble Oil and Refining Company, of a gravity lower than 28 degrees will be paid for with a corresponding decrease of five (5) cents per barrel for each lower degree of gravity.

**Humble does not post on below 28.

SOUTH TEXAS

	Feb. 9 1927
Mirando	1.25

SOMERSET

Grayburg and Pioneer

28 to 28.9	1.25
29 to 29.9	1.30
30 to 30.9	1.36
31 to 31.9	1.54
32 to 32.9	1.62
33 to 33.9	1.70
34 to 34.9	1.78
35 to 35.9	1.86
36 to 36.9	1.94
37 to 37.9	2.02
38 and up	2.10

GULF COAST

Grade "A" all companies	1.40
Grade "B"	1.40
Gulf Coast Light Oil, Below 25	1.40
25 to 25.9	1.45
26 to 26.9	1.50
27 to 27.9	1.55
28 to 28.9	1.60
29 to 29.9	1.65
30 to 30.9	1.70
31 to 31.9	1.75
32 to 32.9	1.80
33 to 33.9	1.85
34 to 34.9	1.90
35 to 35.9	1.95
36 to 36.9	2.00
37 to 37.9	2.05
38 to 38.9	2.10
39 to 39.9	2.15
40 and above	2.20

*Humble Oil and Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crude above 35 is $1.95 per barrel.

Magnolia Petroleum Company's posting stop at 31 to 31.9.

LULING

Based on Contract	1.30

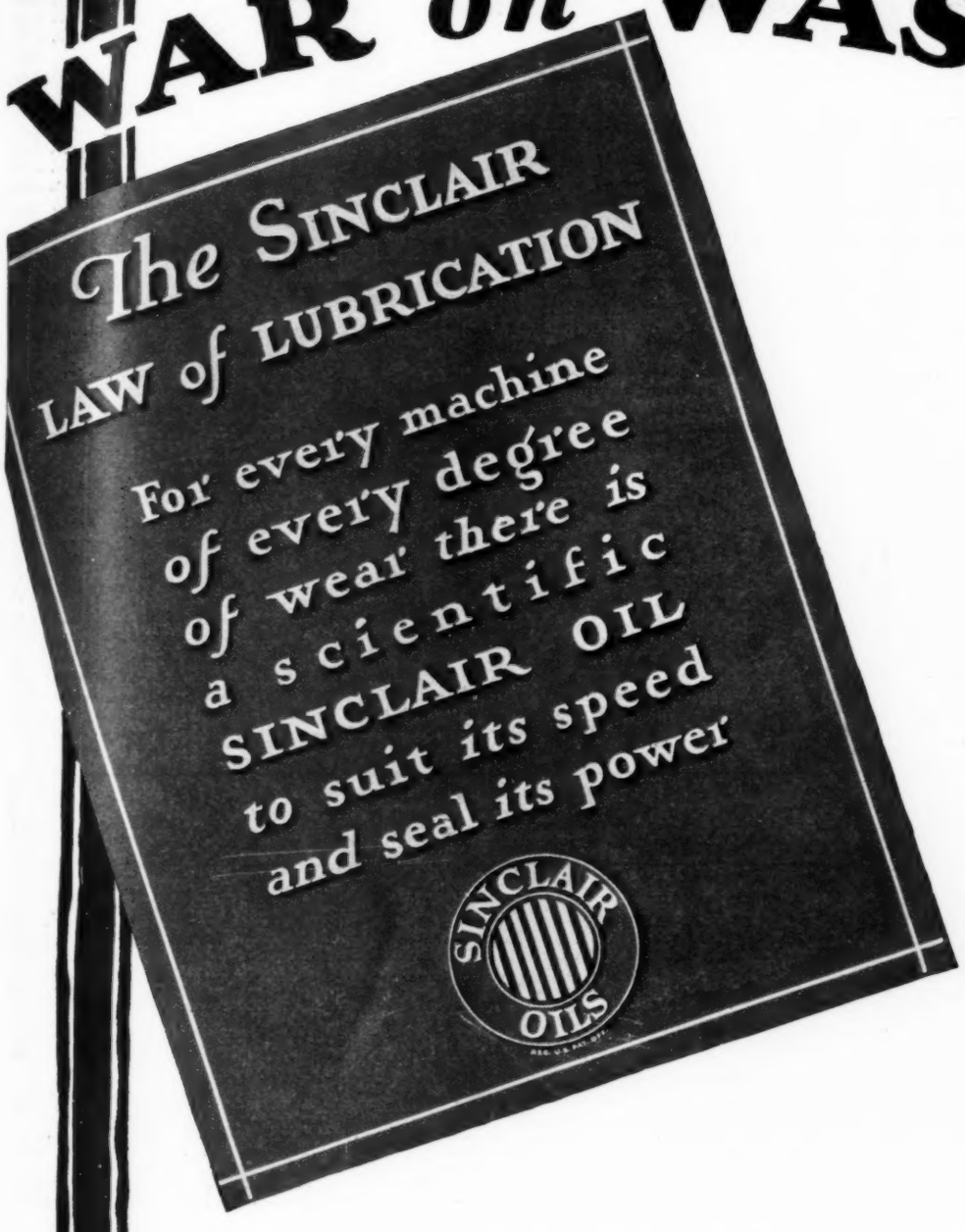
(Continued on page 54)

California Crude Oil Prices at the Well

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity (degrees)	Signal Hill	Huntington Beach	Inglewood	Olinda-Brea Canon	Rosecrans Dominguez	Torrance	Richfield	Whittier	La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall	Midway-Sunset Elk Hills	McKittrick	Lost Hills	Coalinga	Kern River	Wheeler Ridge
14-14.9	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15.9	.87	.87	.87	.87	..	.87	.87	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75	.75
16-16.9	.90	.90	.90	.90	..	.90	.90	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75	.75
17-17.9	.94	.94	.94	.94	..	.94	.94	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75	.75
18-18.9	.98	.98	.98	.98	..	.98	.98	.86	.86	.86	.86	..	.75	.75	.75	.75	.75	.75	.75
19-19.9	1.04	1.04	1.04	1.04	..	1.04	1.04	.87	.87	.87	.87	..	.75	.75	.75	.75	.75	.75	.75
20-20.9	1.10	1.10	1.10	1.10	..	1.10	1.10	.89	.89	.89	.90	..	..	.82	..	.82	.79	..	.78
21-21.9	1.16	1.16	1.16	1.16	..	1.16	1.16	.91	.91	.91	.98	..	..	.90	..	.90	.86	..	.81
22-22.9	1.22	1.22	1.22	1.22	..	1.22	1.22	.94	.94	.94	1.06	..	..	1.00	..	1.00	.93	..	.85
23-23.9	1.28	1.28	1.28	1.28	..	1.28	1.28	..	..	.97	1.14	..	..	1.11	..	1.11	1.00	..	.89
24-24.9	1.34	1.34	1.34	1.34	1.34	1.34	1.34	..	..	1.01	1.22	1.02	..	1.22	..	1.22	1.07	..	.93
25-25.9	1.40	1.40	1.40	1.40	1.40	1.40	1.40	..	..	1.05	1.30	1.08	..	1.33	..	1.33	1.14	..	.97
26-26.9	1.46	1.46	1.46	1.46	1.46	1.46	1.46	..	..	1.09	1.38	1.16	..	1.44	..	1.44	1.21	..	1.01
27-27.9	1.52	1.52	1.52	1.52	1.52	1.52	1.52	..	..	1.13	1.46	1.24	..	1.55	..	1.55	1.28	..	1.05
28-28.9	1.58	1.58	1.58	1.58	1.58	1.58	1.58	..	..	1.17	1.54	1.32	..	1.66	..	1.66	1.35	..	..
29-29.9	1.64	1.64	..	1.64	1.64	..	1.64	..	..	1.21	1.62	1.40	..	1.77	..	1.77	1.42	..	..
30-30.9	1.70	1.70	..	1.70	1.70	..	1.70	..	..	1.25	1.70	1.48	..	1.88	..	1.88	1.49	..	..
31-31.9	1.76	1.76	..	..	1.76	..	..	..	..	..	..	1.60	..	1.99	..	1.99	1.56	..	..
32-32.9	1.84	1.84	..	..	1.84	..	..	..	..	..	..	1.72	..	2.10	..	2.10	1.63	..	..
33-33.9	..	..	..	..	1.92	..	..	..	..	..	..	1.84	..	2.21	..	2.21	1.70	..	..
34-34.9	..	..	..	.	2.00	..	..	..	..	..	..	1.96	..	..	..	2.32	1.77	..	..
35-35.9	..	..	..	..	2.08	..	..	..	..	..	..	2.08	..	..	..	..	1.84	..	..
36-36.9	..	..	..	..	2.16	..	..	..	..	..	..	2.16	..	..	..	..	..	..	..
37-37.9	..	..	..	..	2.24	..	..	..	..	..	..	2.24	..	..	..	..	..	..	..
38-38.9	..	..	..	..	2.34	..	..	..	..	..	..	2.31	..	..	..	..	..	..	..
39-39.9	..	..	..	..	2.44	..	..	..	..	..	..	2.44	..	..	..	..	..	..	..
40-40.9	..	..	..	..	2.54	..	..	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	2.64	..	..	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	2.74	..	..	..	..	..	..	..	..	..	..	..	..	..	..

WAR on WASTE!



THE motorist, in buying oil, is entitled to correct lubrication for his engine—and it is the dealer's responsibility to see that he gets it. Sinclair feels that responsibility—and therefore manufactures Opaline Motor Oil to sell according to the Sinclair Law of Lubrication—a different grade of Opaline Motor Oil "for every degree of wear" of the engine.

This means correct lubrication and economical transportation. It is the motorist's protection against *Waste of Power* and wearing of parts. This is the Sinclair dealer's method of making more satisfied customers.

SINCLAIR REFINING COMPANY
45 Nassau Street, New York
Atlanta Detroit Kansas City Chicago Houston Omaha

SINCLAIR OPALINE MOTOR OIL
REG. U. S. PAT. OFF.

ENTIRE CONTENTS COPYRIGHTED, 1926, BY SINCLAIR REFINING CO.

TEXAS PANHANDLE
Magnolia Petroleum Company

	Feb. 9 1927
Hutchinson, Carson and Gray counties, all grades	1.25

Humble Oil & Refining Company
Hutchinson and Carson Counties, all grades 1.25

Gray County

28 to 28.9 gravity	1.00
29 to 29.9	1.05
30 to 30.9	1.10
31 to 31.9	1.15
32 to 32.9	1.20
33 to 33.9	1.25
34 to 34.9	1.30
35 to 35.9	1.35
36 to 36.9	1.40
37 to 37.9	1.45
38 to 38.9	1.50
39 to 39.9	1.55
40 to 40.9	1.60
41 to 41.9	1.65
42 to 42.9	1.70
43 to 43.9	1.75
44 and above	1.80

Crane-Upton-Crockett Counties

Below 26 gravity	.80
26 to 26.9	.85
27 to 27.9	.90
28 to 28.9	.95
29 to 29.9	1.00
30 to 30.9	1.05
31 to 31.9	1.10
32 to 32.9	1.15
33 to 33.9	1.20
34 to 34.9	1.25
35 to 35.9	1.30
36 and above	1.35

Wheeler County
(Humble Oil and Refining Company)

28 to 28.9 gravity	.90
29 to 29.9	.95
30 to 30.9	1.00
31 to 31.9	1.05
32 to 32.9	1.10
33 to 33.9	1.15
34 to 34.9	1.20
35 to 35.9	1.25
36 to 36.9	1.30
37 to 37.9	1.35
38 to 38.9	1.40
39 to 39.9	1.45
40 to 40.9	1.50
41 to 41.9	1.55
42 to 42.9	1.60
43 to 43.9	1.65
44 and above	1.70

Crane-Upton Counties
Kay County Gas Company

Below 26 gravity	.80
26 to 26.9	.85
27 to 27.9	.90
28 to 28.9	.95
29 to 29.9	1.00
30 to 30.9	1.05
31 to 31.9	1.10
32 to 32.9	1.15
33 to 33.9	1.20
34 to 34.9	1.25
35 to 35.9	1.30
36 and above	1.35

Kay County Gas Company and Gulf Pipe Line Company
Hutchinson and Carson Counties, All grades $1.25

WYOMING-MONTANA
Wyoming

Byron	2.00
Ferris	1.80
Elk Basin	2.00
Grass Creek	2.00
Rock Creek	1.85
Lost Soldier	1.35
Lance Creek	2.00
Mule Creek	1.45
Notches	.65
Big Muddy	1.85
Osage	2.00
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	2.00
Lander	1.00

Salt Creek
(Midwest Refining Company)

	Feb. 9 1927
29 to 29.9 gravity	1.55
30 to 30.9 gravity	1.60
31 to 31.9 gravity	1.65
32 to 32.9 gravity	1.70
33 to 33.9 gravity	1.75
34 to 34.9 gravity	1.80
35 to 35.9 gravity	1.85
36 to 36.9 gravity	1.90
37 to 37.9 gravity	1.95

Montana

Sunburst	1.35
Cat Creek	2.40

NEW MEXICO

Artesia	1.65
Hogback	2.45

CANADIAN CRUDE

Oil Springs	2.68
Petrolia	2.61

*Bounty on Canadian crude is ¾ cent per gallon, or 26¼ cents per barrel.

LOUISIANA-ARKANSAS
(Louisiana Oil Refining Company, Gulf Refining Company of Louisiana and The Texas Co.) Homer, Haynesville, Caddo, El Dorado, De Soto and Chrichton.

Below 28 gravity	1.40
28 to 28.9	1.50
29 to 29.9	1.55
30 to 30.9	1.60
31 to 31.9	1.65
32 to 32.9	1.70
33 to 33.9	1.75
34 to 34.9	1.80
35 to 35.9	1.85
36 to 36.9	1.90
37 to 37.9	1.95
38 to 38.9	2.00
39 to 39.9	2.05
40 to 40.9	2.10
41 to 41.9	2.15

	Feb. 9 1927
42 to 42.9	2.20
43 to 43.9	2.25
44 to 44.9	2.30
45 to 45.9	2.35
46 to 46.9	2.40
47 to 47.9	2.45
48 to 48.9	2.50
49 to 49.9	2.55
50 to 50.9	2.60
51 to 51.9	2.65
52 and above	2.70

Atlantic Oil Producing Company posts this same schedule on Homer, Haynesville, and West El Dorado.

Magnolia Petroleum Company has the same posting on Pine Island, Haynesville, Bull Bayou and El Dorado.

STEPHENS
Louisiana Oil Refining Company, Gulf Refining Company of Louisiana and Atlantic Oil Producing Company

Below 28	1.30
28 to 28.9	1.40
29 to 29.9	1.45
30 and above	1.50

SMACKOVER
(All companies)

27 and above	1.50
26 to 26.9	1.45
25 to 25.9	1.40
24 to 24.9	1.35
Below 24 gravity	1.10
Bellevue	1.40
Jennings	1.15
Vinton	1.50
Edgerly	1.50
Urania	1.10
Cotton Valley	1.20
Calion	1.10

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS
(American Petroleum Institute Figures. Barrels of 42 gallons)

	Week Ended Jan. 29	Week Ended Jan. 22
AT ATLANTIC COAST PORTS—		
Baltimore	175,000	78,000
Boston	65,000	.....
New York	394,000	413,000
Philadelphia	.....	.....
Others	298,000	175,000
Total	932,000	666,000
Daily average	133,143	95,143
AT GULF COAST PORTS—		
Galveston District	.....	115,000
New Orleans and Baton Rouge	426,000	187,000
Port Arthur and Sabine District	.....	.....
Tampa	.....	48,000
Total	426,000	350,000
Daily average	60,857	50,000
AT ALL U. S. PORTS—		
Total	1,358,000	1,016,000
Daily average	194,000	145,143
Daily average four weeks ended	180,536	160,857

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS
(American Petroleum Institute Figures. Barrels of 42 gallons)

	Week Ended Jan. 29	Week Ended Jan. 22
AT ATLANTIC COAST PORTS—		
Baltimore	.....	80,000
Boston	.....	90,000
New York	80,000	75,000
Philadelphia	214,000	.....
Others	75,000	.....
Total	369,000	245,000
Daily average	52,714	35,000
AT GULF COAST PORTS—		
Total Atlantic and Gulf Coast Ports	369,000	245,000
Daily average	52,714	35,000
Daily average four weeks ended	56,464	76,643
DISTRIBUTION OF TOTAL CALIFORNIA OIL RECEIPTS—		
Crude	80,000	.....
Gasoline	80,000	170,000
Gas Oil	.....	75,000
Fuel Oil	209,000	.....
Total	369,000	245,000

"Our Franklin Valveless Engine Runs Like a Cadillac"

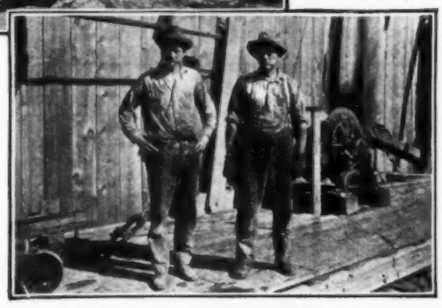
That's what W. J. Bradley, driller for the Twin State Oil Company, thinks of his power plant. And no wonder! Look at his record.

500 Feet of Hole in One Week

On the Twin State wildcatter at Stillwater, Oklahoma, Mr. Bradley put down 500 feet of 24-inch hole in seven days drilling. But speed isn't all the Franklin Valveless gives you.

Saved $30.00 a Day

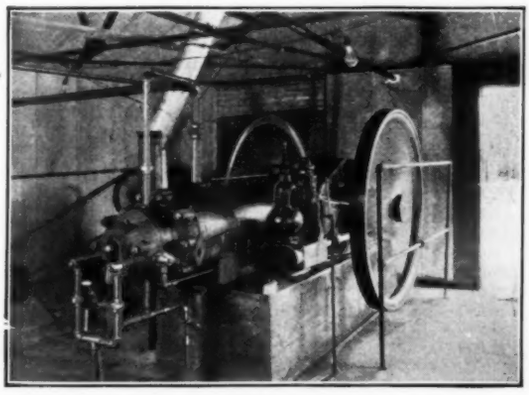
"If steam was used to drill this well," writes Mr. Bradley, "the cost would be about $25.00 a day for fuel oil, and the water which had to be pumped ½ mile, would cost $10.00 a day. The cost of our Franklin Engine is $2.50 a day for water and the same for fuel oil—meaning a saving of $30.00 per day on these two items alone."

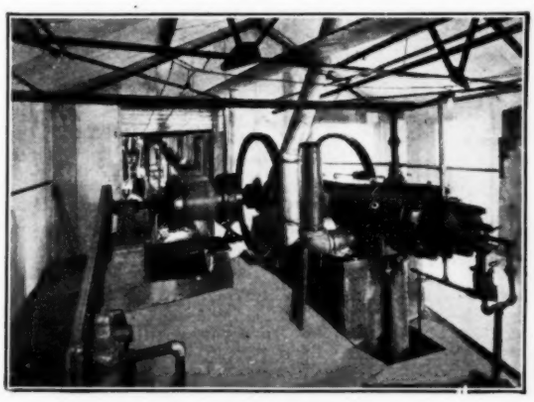


Twin State Oil Company certainly got hold of two good men when they took on Ray Goff, Tool Dresser, and W. J. Bradley, Driller—shown here on the Stillwater wildcat location.

What About Your Drilling Costs?

More than one owner has found it costs him less to scrap his boiler and engine and put in a Franklin Valveless than to keep up repairs on his fuel-eating steam outfit. Ask the nearest representative for some facts and figures on the operating and maintenance costs of Franklin Valveless Oil and Gas Engines.





These two photographs give you a good idea of a Franklin Valveless Oil Drilling Engine on the job. A neat, clean installation that requires practically no attention for days on end. The Franklin Valveless is fully controlled from the derrick—fast, flexible, powerful, economical.

FRANKLIN VALVELESS ENGINE COMPANY

FRANKLIN, PENNA.

Atlas Supply Company,
Muskogee, Oklahoma and Branches
New Martinsville Supply Co.,
New Martinsville, W. Va.
Bradford Sales Co., Bradford, Penna.

Distributed by
Washington Engine & Pump Co.
Washington, Pa.
International Supply Co.,
Tulsa, Oklahoma and Branches
Wooster Tool & Supply Co., Wooster, Ohio

Atha Supply Co., Zanesville, Ohio.
McEwen Brothers, Bolivar, N. Y.
The American Tank Co. of Colorado,
Casper, Wyoming

FRANKLIN VALVELESS ENGINES

THEY BEAT STEAM AT EVERY TURN

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision;

Month—	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Ark.	Eastern States	Rocky Mountain	California	United States Ave.	Gross
January	449,370	100,130	260,180	90,290	43,990	181,190	101,000	102,300	621,300	1,946,980	60,356,380
February	450,037	101,937	245,989	91,550	45,090	169,676	99,000	98,412	605,250	1,909,637	53,469,836
March	454,762	103,300	260,262	92,712	48,787	164,312	97,625	102,325	604,500	1,929,562	59,816,422
April	467,175	101,825	263,612	88,812	50,562	169,894	100,875	106,675	600,000	1,947,387	58,421,610
May	463,750	105,690	277,700	94,550	58,150	175,430	105,700	112,300	602,720	1,995,990	61,875,690
June	456,450	107,637	302,187	89,912	60,412	167,887	106,250	112,925	606,925	2,013,187	60,395,610
July	456,920	110,320	336,600	114,760	57,460	161,870	104,700	108,520	613,940	2,062,470	63,936,570
August	465,137	111,600	381,550	161,237	56,787	157,375	108,350	110,737	609,725	2,162,662	67,042,522
September	465,387	113,037	402,212	175,512	56,575	154,037	110,125	105,825	598,100	2,180,862	65,425,860
October	497,120	114,720	439,490	170,350	58,200	149,810	109,500	99,060	611,600	2,259,850	70,055,350
November	551,225	115,425	475,987	176,425	56,575	144,100	111,125	93,537	641,325	2,365,475	70,964,250
December	561,012	118,950	483,050	181,263	55,137	139,250	110,375	87,650	659,925	2,396,112	71,279,472
January 1	571,100	118,400	471,600	183,250	53,800	136,640	109,000	80,600	664,000	2,388,400	.....
January 8	587,200	116,600	466,000	183,650	51,150	133,250	108,500	84,700	658,800	2,389,850	.....
January 15	594,650	118,900	470,200	178,950	53,300	133,550	108,000	81,950	651,500	2,391000	.....
January 22	**597,650**	**117,800**	**463,450**	**175,650**	**53,550**	**130,850**	**107,500**	**85,600**	**656,600**	**2,388,650**	.....
January 29	607,250	115,750	463,300	160,150	53,350	128,950	107,500	86,700	647,400	2,370,350	.....
January, 1926	591,570	117,490	466,910	176,330	53,030	132,648	108,100	83,910	655,660	2,385,650	73,955,150
February 5	637,300	115,500	472,900	159,050	53,250	127,900	107,000	83,000	646,500	2,402,400	.....
Increase	30,050	.....	9,600	.....	.....	.....	.....	.....	.....	32,050	.....
Decrease	.....	250	.....	1,100	100	1,050	500	3,700	900	.....	.....

Texas

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Feb. 5.	Jan. 29
Hutchinson County	113,400	111,150
Gray County	8,450	8,900
Carson County	5,650	5,600
Wheeler County	1,750	1,750
Others	50	50
Totals	129,300	127,450

NORTH TEXAS

Burkburnett	14,700	14,700
Electra	15,850	16,050
Iowa Park-KMA	4,950	5,000
Wilbarger	14,350	15,150
Archer County	33,850	34,350
Clay County (Petrolia)	900	900
Baylor County	150	150
Montague and Cooke Cos.	13,750	13,400
Totals	98,500	99,700

WEST CENTRAL TEXAS

Stephens County	10,200	10,350
Eastland-Desdemona	5,850	5,850
Brown County	27,600	22,800
Coleman County	1,750	1,700
Callahan County	6,600	6,300
Shackelford County	14,500	14,600
Young County	9,100	9,150
Throckmorton County	4,250	4,250
Jack County	750	750
Palo Pinto County	2,700	450
Jones County	3,600	2,100
Mitchell-Scurry Cos.	2,250	3,850
Howard County	2,300	2,300
Reagan County	28,100	28,750
Crane - Upton Counties	36,250	31,300
Crockett County	1,750	1,750
Others	1,100	700
Totals	158,650	147,000

EAST CENTRAL TEXAS

Mexia	11,700	11,700
Currie	750	700
Richland	1,400	1,400
Wortham	5,200	5,700
Corsicana - Powell	21,850	22,400
Nigger Creek	6,750	8,050
Totals	47,650	50,000

SOUTHWEST TEXAS

Luling	17,850	17,800
Lytton Springs	2,850	2,850
Somerset	1,850	1,900
Laredo District	15,400	15,600
Piedras Pintas	200	300
Others	650	700
Totals	38,800	39,150
T'ls Tex. (Outside Gulf Coast)	472,900	463,300

TEXAS GULF COAST

West Columbia	10,750	11,300
Damon Mound	1,050	950
Boling	2,200	2,350
Big Creek	2,200	2,150
Blue Ridge	1,900	2,700
Pierce Junction	8,050	6,350
Humble	4,300	4,300
Goose Creek	8,050	7,950
South Liberty	4,400	4,450
Hull	17,850	17,600
Saratoga	1,150	1,150
Batson	1,600	1,600
Sour Lake	5,150	4,800
Spindle Top	69,250	70,100
Orange County	5,350	6,500
Others	3,300	3,350
Totals	146,800	147,650

Oklahoma

North Braman	8,550	9,050
South Braman	4,200	4,300
Blackwell	4,000	4,100
Hubbard	7,150	7,150
Thomas	1,750	1,800
Garber	18,800	18,800
Tonkawa	25,500	25,350
Burbank	47,550	47,850
Osage (outside Burbank)	35,250	36,050
Watchorn	2,700	2,700
Cushing	21,250	21,400
Yale Jennings	12,300	12,400
Davenport	4,050	3,950
Bristow Slick	27,350	27,400
North Okmulgee	17,000	17,200
Lyons Deaner	4,450	4,400
Stroud	1,650	1,650
Cromwell	13,250	13,400
Papoose	7,650	7,850
Wewoka	20,000	21,200
Duncan District	6,850	7,050
Earlboro	9,050	9,100
Graham	9,000	9,000
Fox	1,900	1,950
Healdton	1,500	15,000
Seminole	226,000	195,400
Hewitt	10,400	10,400
Scholem Alechem	12,950	11,700
Others	61,750	59,650
Totals	637,300	607,250

California

Seal Beach	11,900	10,200
Sante Fe Springs	45,500	45,500
Long Beach	93,000	93,000
Huntington Beach	89,000	90,000
Torrance	25,000	25,000
Dominguez	19,000	18,500
Rosecrans	12,500	12,500
Inglewood	38,000	38,500
Midway-Sunset	90,500	90,500
Ventura Avenue	50,100	51,700
Others	172,000	172,000
Totals	646,500	647,400

Kansas

Florence-Covert	1,900	1,950
Peabody-Ebling	3,850	3,900
Eldoralo-Towanda	13,300	13,250
Augusta-Fox Bush	4,700	4,800
Rainbow Bend	2,900	3,100
Russell	3,600	3,650
Greenwood County	43,000	43,600
Churchill	13,500	12,500
Others	28,750	29,000
Totals	115,500	115,750

North Louisiana

	Feb. 5.	Jan. 29
Homer	5,250	5,250
Haynesville	8,400	8,350
Caddo Light	10,400	10,100
Caddo Heavy	3,550	3,800
DeSoto-Red River	3,950	3,900
Elm Grove	650	600
Bellevue	1,550	1,550
Cotton Valley	6,550	6,550
Urania	12,950	13,250
Totals	53,250	53,350

LOUISIANA GULF COAST

Vinton	5,800	5,800
Lockport	3,050	3,250
Evangeline	1,200	1,200
Edgerly	550	600
Others	1,650	1,650
Totals	12,250	12,500
Totals Gulf Coast	159,050	160,150

Arkansas

El Dorado	6,200	6,150
Smackover Light	11,950	12,050
Smackover Heavy	100,950	101,850
Stephens	1,450	1,450
Nevada	1,850	1,850
Lisbon	5,200	5,300
Others	300	300
Totals	127,900	128,950

Mountain States

WYOMING

Salt Creek	42,000	47,200
Grass Creek	2,750	2,650
Elk Basin	650	700
Big Muddy	2,950	2,750
Lost Soldier	3,850	3,900
Rock River	2,950	2,700
Teapot Dome	1,050	600
Lance Creek	750	750
Others	1,350	1,450
Totals	58,300	62,700

MONTANA

Cat Creek	2,350	2,400
Sunburst	10,000	10,000
Others	200	150
Totals	12,550	12,550

COLORADO

Moffats (Craig)	2,650	2,700
Fort Collins	4,000	4,050
Florence	400	450
Others	350	550
Totals	7,400	7,750

NEW MEXICO

Table Mesa	150	100
Artesia	2,000	2,000
Hogback	900	850
Rattlesnake	1,700	750
Totals	4,750	3,700
Totals Mountain States	83,000	86,700

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.) 107,000 107,500

PRODUCTION SUMMARY

East of Rockies	1,672,900	1,636,250
United States	2,402,400	2,370,350

Not Only—

A most complete line of supplies of merit, and stocked for the instantaneous service that the Oil Industry requires—

But Also—

Representatives experienced in field, pipe line and refinery work, and therefore appreciative of your problems, and interested in serving you well.

A Partial List of Leading Supply Items

Jones & Laughlin
Welded Steel Line Pipe,
Casing and Tubing
Hercules Engines and Power Units
A. M. Byers Drill Pipe, Tubing
and Casing

Pittsburgh Steel Products
Seamless Interior Upset Pipe
Chain Belt Co.: Deep Well Chain
Whitlock Cordage
and a complete line of field and refinery
fittings, etc.

Try Our Service

Have you a copy of our Catalogue?

NORVELL WILDER HARDWARE CO.

NORVELL WILDER HARDWARE CO. QUALITY AND SERVICE

BEAUMONT HOUSTON SHREVEPORT FORT WORTH

Say you saw it in The OIL WEEKLY

BELL SOCKET SPEAR
JAR UP & DOWN CASING RIPPER
ECCENTRIC GRAB
2 IN 1 WALL HOOK
KICK OFF TOOL
JAR UP & DOWN CASING RIPPER
CASING COLLAR RIPPER
HONEST TOOLS
By HINDERLITER
WIRE ROPE KNIFE
TUBING HOOK WITH SLIP
ECCENTRIC COMB SOCKET
3 WAY JAR UP RIPPER
JAR REIN SOCKET
ECCENTRIC GRAB
ECCENTRIC COMBINATION SOCKET
ROPE SPEAR WITH KNIFE
3 PRONG GRAB AND ROPE SPEAR
HINDERLITER
JOINT BREAKER
"The biggest little tool Company in the Oil country"
HINDERLITER
TOOL COMPANY
TULSA, OKLAHOMA

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

Summarized Review of Field Results

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	9	4	6	2	1	2	2	..	240	60
California	18	16	17	16	..	..	1	..	9214	7238
Colorado	1	1	1	1	..	..	..	..	40	375
Indiana	4	4	3	2	..	..	1	2	110	41
Illinois	2	4	2	1	..	..	..	3	45	1
Kansas	22	38	10	18	2	1	10	19	1270	4263
Kentucky	29	24	19	22	2	..	8	2	633	402
Louisiana	15	19	11	6	..	6	4	7	1176	235
Michigan	5	4	5	4	..	..	..	..	130	55
Mississippi	..	..	..	..	..	..	..	..	....	....
Montana	5	6	5	6	..	..	..	..	460	790
New York	..	12	..	11	..	1	..	..	....	24
New Mexico	1	2	..	2	..	..	1	..	....	160
Ohio	39	50	20	19	13	19	6	12	1482	162
Oklahoma	64	87	55	38	2	12	7	37	28,356	11,440
Pennsylvania	16	63	3	58	10	3	3	2	15	156
Tennessee	..	..	..	..	..	..	..	..	....	....
Texas	143	153	97	92	1	2	45	59	24,110	28,786
West Virginia	40	29	10	10	27	13	3	6	89	81
Wyoming	2	6	..	5	1	1	1	..	....	1500
Totals	415	522	264	313	59	60	92	149	67,370	,55,769
Increase this week	..	..	..	..	..	..	..	..	11,601	....
Decrease this week	107	..	49	..	1	..	57	..	....	....

Texas

ARCHER COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Bridwell-Heydrick Oil Co.'s Abercrombie-Taylor 10-A	30	1308
Continental Oil Co. & Republic Prod. Co.'s Oldham 5	*	1400
Golding-Cochran & Cline's Prideaux 10	*	690
Hazlett-Simmons et al's Wilson 2	45	1642
Mark Kleedon et al's Riggs 1	*	1785
Kruger et al's Wolf 1	50	1374
Jesse Lincoln et al's L. L. Hudson 1	15	1440
Magnolia Pet. Co.'s A. J. Lowe 30	15	1263
Marland Oil Co. and Consolidated Oil Co.'s Ward 1	65	1022
Pandem Oil Corp.'s L. L. Hudson 7	20	1380
Pet. Producers Co.'s Thomas 2	*	1205
Pet. Prod. Co. et al's Turbeville 13	40	1516
Phillips & Skinner's Lyles 1	*	1650
Simms Oil Co.'s Turbeville 16-A	450	1496
The Texas Co.'s Neal 1	*	1228
Prideaux 8-B	5	681
Tidal Oil Co.'s Turbeville 2-A	*	1499
W. C. Young et al's Moss 1	*	1010

BIG LAKE

Company, Well and Location	Initial Production Bbls.	Depth
Texon Oil & Land Co.'s University 64	175	2947
University 65	375	2987

BROWN COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Brown & Co.'s George 1	*	1400
Geo. A. Henshaw & Co.'s Lowe 10	800	1301
Lowe 16	1235	1271
Lowe 22	750	1278
Humble O. & R. Co.'s Foster 9	20	1205
Hickman 8	30	1224
Humphreys Bros. et al's H. A. Newton 6	*	1452
Magnolia Pet. Co.'s M. E. Fry 8	10	1321
McLester Oil Co.'s D. C. Wooldridge 19	55	1229
Selby Oil & Gas Co.'s Hays 1	*	1370
The Texas Co.'s W. N. Pugh 5	150	1349
Valley Oil Co.'s Teston 4	65	1217
Wakefield et al's J. P. Newton 2	300	1270
Williamson et al's D. C. Wooldridge 7	25	1254

BURKBURNETT

Company, Well and Location	Initial Production Bbls.	Depth
Bridwell-Heydrick Oil Co.'s Ward-Todd 16	30	1916
Magnolia Pet. Co.'s S. L. S. Heiserman 8	6	1658

BAYLOR COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Pandem Oil Corp. et al's Sykora 1.	*	1450

CALLAHAN COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Gibson-Johnson et al's Hutchinson 1	*	1600

COLEMAN COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Ehorn & Quinn's Green 1	*	1438

CARSON COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Gamble & Co.'s John Dees 1	*	1590
Marland Oil Co.'s E. F. Bryan 2	720	3250
Prairie O. & G. Co.'s J. W. McConnell 1-A	1220	3150

COOKE COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Kerper & Greer et al's Field 1	*	2501

CRANE COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Eastland Oil Co. and J. D. Collett's University 1	1850	2905
Magnolia Pet. Co.'s University-O'-Keefe 3	440	2967

EASTLAND COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia Pet. Co.'s F. E. Thomas 1	20	3048
Meredith et al's S. M. U. 1	*	1753
Panhandle Ref. Co.'s Hightower 25	*	1230
Teatsorth et al's Hargus 1	25	1520

ELECTRA

Company, Well and Location	Initial Production Bbls.	Depth
Bridwell-Mayfield et al's Waggoner 2	20	1325
Continental Oil Co.'s Burnett 5-O	15	1800
J. C. Jennings et al's Jennings 1	50	1823
Madison Oil & Gas Co.'s Burnett 18	45	1508
John O'Neil's Yarbrough 2	*	1745

HUTCHINSON COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Dixon Creek Oil Co.'s Smith 30, shot	500	2905
Smith 31, shot	700	2825
Phillips-Heywood et al's Smith 3, shot	400	3060
Phillips Pet. Co.'s Johnson-Dave 1, shot	65	2956
Johnson-Ford 1	300	2948
Johnson-Graham 4, shot	350	3000
J. A. Whittenburg-Elra 4, shot	150	2870
J. A. Whittenburg-Coble 19, shot	200	2956
Phillips Pet. Co. and Gibson Oil Corp.'s W L. Kinglsand 5, shot	80	2779
Prairie & Phillips Pet. Co.'s Johnson 6-B, shot	70	2783
Skelly Oil Co.'s Johnson (Sec. 20) 14	215	2978
Johnson (Sec. 20) 16	30	2995
White Eagle O. & R. Co.'s Johnson-Underwood 1	¶50	3102

JACK COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Buttram Pet. Corp.'s Preston 7-C	40	2077

K-M-A AND IOWA PARK

Company, Well and Location	Initial Production Bbls.	Depth
Craig-Wilson et al's Moore 1	*	1635
Fain-McGaha Oil Corp.'s Ferguson 1	*	1903
Turner-Hines Drilling Co.'s River Bed 3	†	1650

MITCHELL COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
The California Co.'s J. J. Handley 2	35	3080
A. L. Miller 6	75	3030

MONTAGUE COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Cato Oil Co.'s Rolls 10	40	888
Continental Oil Co.'s Bouldin 14-A.	25	1100
J. W. Maddox 10-A	35	909
J. W. Maddox 11-A	25	927
J. W. Rowland 10-B	30	1103
J. W. Rowland 6-C	*	1190
F-H-E Oil Co.'s N. J. Howard 2-C.	55	1178
Gracey-Kahle et al's Maddox 4	65	882
Pure Oil Co.'s J. W. Rowland 7-B	*	1094
The Texas Co.'s J. W. Maddox 9-A.	40	901
J. W. Maddox 7-D	30	935

PALO PINTO COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Texas Pacific Coal & Oil Co.'s Fee 1-X	*	3360
J. N. Stuart 151	135	1608

SHACKELFORD COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Lee-Dingee et al's Meyer 2	40	1019
Overlees et al's Matthews 5	5	1055
Roeser-Pendleton & Marland Oil Co.'s W. I. Cook 23-A (Sec. 60)	30	1178
W. I. Cook 29-A, (Sec. 60)	350	1206
W. I. Cook 31-A, (Sec. 60)	300	1334

SOUTH VERNON DISTRICT

Company, Well and Location	Initial Production Bbls.	Depth
Apple-Brandeberry Oil Co.'s Ancell 2-J	40	1728
Fain-McGaha Oil Corp. and Roxana et al's Fluhman 3	115	1498
Gulf Prod. Co.'s C. F. Blackman 1	240	1490
Humble O. & R. Co.'s W. T. Waggoner 13-0	110	2384
Milham Corp.'s W. T. Waggoner 20-L	30	2404
Phillips Pet. Co.'s Waggoner 3-R	115	1886

STEPHENS COUNTY

Barkley-Conway et al's Bradford 2	*	2046
Humble O. & R. Co.'s Hamil 1	*	4060
Cockrell 1	*	4013
Mid-Kansas O. & G. Co.'s Kirkland 1	5	3553
Pearson et al's Hefley 2	40	2013
Urban et al's Webb 1	*	3785

THROCKMORTON COUNTY

Marland & Texon Oil & Land Co.'s Reynolds 1	*	2872
Reiter-Foster Oil Corp.'s M. K. Graham 1-A	15	1792

UPTON COUNTY

Gulf Production Co.'s M. L. Baker	150	2320
2-B	150	2320
E. S. Hughes 2	140	2161
E. S. Hughes 3	150	2130
Marland Oil Co.'s T. E. Shirley 4	35	2183
Roxana Pet. Corp.'s B. H. Estep 7	*	2385
E. S. Hughes 5	50	2183
Sun Oil Co.'s A. S. Burleson 7	100	2160
The Texas Co.'s Richard King 14	20	2125
Richard King 16	1000	2100
Wentz Oil Corp.'s Shirk 3	*	2370

YOUNG COUNTY

Allday Oil Corp.'s Davis 1	*	1016
Goldsmith et al's Wilson 2	*	1110
Magnolia Pet. Co.'s I. C. Little 15	90	1287
McChesney et al's Beardon 3	15	1090
Pitzer-West et al's Scott 1	*	2213
Roberts Oil Corp.'s Prideaux 2	20	494
Tidal Oil Co. et al's Benson 10	265	884

GULF COAST

Spindle Top—		
Yount Lee Oil Company's McFaddin 23	5000	2925
Gulf Production Co.'s No. 6 Jeanette Mann, wo	219	3100
No. 11 James F. Weed "A"	200	4550
Deutser Oil Co.'s No. 1 Scharbauer	*	1975
Seven Oil Co.'s No. 1 Trembly, wo	*	1560
Batson—		
Capitol Oil Co.'s No. 6 Hodges, wo	150	3700
Hull—		
Gulf Production Co.'s No. 78 Phoenix Development Co.	*	4000
Republic Production Co.'s No. 18 Dolbear, wo	15	1490
South Liberty—		
The Texas Co.'s No. 6 Staiti	125	3500
Pierce Junction—		
Navarro Oil Co.'s No. 1 Cain, wo	250	3950
J. F. Bashara's No. 2 Higgins	25	3500
Big Creek—		
Gulf Production Co.'s No. 33 T. W. Davis, wo	1800	3850
Orange—		
Orange Petroleum Co.'s No. 4 Winfree, wo	*	4100

EAST TEXAS

Shelby County—		
Roy Anderson's Pickering 2, Monroe H/R Survey,	*	2611

SOUTHWEST TEXAS

Duval County—		
O'Hern and Seacord No. 5 Benavides	oil	1753
Webb County—		
Ball et al No. 4, blk. 74	*	3812

SOUTH LOUISIANA

Vinton—		
Edgerly Petroleum Co.'s No. 4 Vincent, wo	100	3200
Vinton Petroleum Co.'s No. 5 Rescue	150	2090
Edgerly—		
C.M. Cortty's No. 14 Lillard	300	2350
Rex Petroleum Co.'s No. 4 Hunter	25	4027

Louisiana

Company, Well and Location	Initial Production Bbls.	Depth
Caddo Parish—		
J. W. Burton Trust's Caldwell 6, 18-21-15	6	1060
Empire Gas & Fuel Co.'s Caddo Levee Board 1, 36-21-16	30	2222
Magnolia Pet. Co.'s D. Raines 25, 22-21-15	15	1660
Owl Oil Co.'s Florsheim 1, 9-17-16	5	2554
Muslow Pet. Co.'s Muslow 2, 32-21-15	15	1690
Total, 5 wells	71	
Haynesville Field—		
Gilliland Oil Co.'s (Ramsey) Taylor B-10, 14-23-8	15	4529
Shongaloo Gas Field—		
Ohio Oil Co.'s Pickett 1, 30-23-9	¶10	2658

Oklahoma

Carter County—		
Amerada Pet. Corp.'s No. 4 J. Babtiste, NEc NW NE 29-5-1	35	1615
No. 10 Criner, NWc SW NE NW 20-5-1	75	3014
Atlantic Oil Co.'s No. 1 Lules, NEc NW NW 11-2-3	325	2888
Magnolia Pet. Co.'s No. 7 Adams, NE SE SE 3-2-3	285	3090
Humble O & R Co.'s No. 2 Dixon, SWc 18-1-3	277	2618
Creek County—		
Gypsy Oil Co.'s No. 21 McGuire, NWc SW NE 1-18-11	30	1935
No. 22 McGuire, SWc NW SW NE 1-18-11	50	2075
Savoy Oil Co.'s No. 1 Townlot, SEc NE NE 6-18-12	915	2260
D. W. Franchot et al's No. 1-a Harry, NWc NE 9-14-10	150	3152
R. D. Donnelly et al's No. 2 Scott, SE SW NW SE 20-14-10	75	2755
T. B. Slick's No. 1 Harjo, NEc SE SW 32-14-10	150	3388
Shaffer Oil & R Co. et al's No. 2 Brune-, SWc SE SE 17-17-8	145	3542
Gled Oil Co.'s No. 6 W. Ross, NWc SW NW SW 13-19-8	150	2922
Silurian Oil Co.'s No. 13 Starr (owd) NEc SE SE 8-18-7	40	2570
Alvard & West's No. 3 Freeman, c E L NE SW 14-17-8	*	3685
Transcontinental Oil Co.'s No. 2 Morrison, c SE NW 25-17-8	*	3134
Jackson & Wise's No. 4 Unallotted, c N L SW SW 20-17-10	*	2116
Bu-Vi-Bar Oil Corp.'s No. 1 Grayson, SW NW NE 16-17-9	*	3264
The Texas Co.'s No. 13 Land, c N L NE SW 1-18-11	*	2177
Garfield County—		
Sinclair O & G Co.'s No. 40 Hartley, SWc NW 18-22-3	120	3054
No. 55 Hartley, c NW NW 18-22-3	205	3800
Grady County—		
Carter Oil Co.'s No. 5 Lindsey, SEc NW SW 35-3-5	50	1511
Garvin Drlg. Co.'s No. 1 Walford, SEc SW SE NW 16-3-5	200	1776
Watchorn O & G Co.'s No. 2 Pettitt, NE NW SE 11-4-8	¶30	2400
Kay County—		
Comar Oil Co.'s No. 4 Bechtel(owd) NWc SE SW 5-28-1	245	2771
No. 1-a Johnson, SEc SW 5-28-1	244	2800
Gypsy Oil Co.'s No. 5 Gardner, NWc SW 28-25-1	60	4185
No. 1 Hack, NEc SE 29-28-1	1100	4384
Okfuskee County—		
Barnsdall Oil Corp.'s No. 1 Gilbert NW SE SW 15-10-9	¶90	3310
Josey Oil Co.'s No. 2 Stubblefield, c NE NW 33-12-11	175	3644
T. T. Blakely's No. 1 Harvison, SE SW SE 17-12-10	*	3000
Osage County—		
Phillips Pet. Co.'s No. 3, SW SE SW 1-27-5	100	3024
No. 3, SWSE SE 7-27-6	100	2987
Kewanee O & G Co.'s No. 3, SE SW SE 34-27-6	600	2820
Phillips Pet. Co.'s No. 6, NEc SW SW 21-26-6	150	2942
I. D. Simmons et al's No. 2, SE SW SW 30-24-9	30	2137
Skelly Oil Co.'s No. 6, NE SE NW 28-26-6	150	2984
Knupp et al's No. 1, NEc NW 28-22-12	*	1860
Pawnee County—		
Magnolia Pet. Co.'s No. 4 H. Vogler, SWc SE NE	365	3220
Payne County—		
Hale & Cassidy No. 9 Cochran, SWc SE 30-18-5	20	3773
Pottawatomie County—		
Magnolia Pet. Co.'s No. 1 Hathcock NWc SE 11-7n 4	166	3905
Seminole County—		
Carter Oil Co.'s No. 1 Knapp, SE SW SW 13-9-6	500	4200
No. 2 Knapp, SE SW SW 13-9-6	500	4168
No. 1 G. F. Killing, SWc SE 14-9-6	2510	4067
Amerada Pet. Co.'s No. 4 Rentie, SW NW NE 23-9-6	1755	3992
Barnsdall Oil Corp.'s No. 6 Carter, SWc NW 24-9-6	1147	4165
Superior Oil Co.'s No. 2 Cudjo, NE SE NW 35-9-6	2186	4008
No. 2 Cudjo, SWc SE NW 35-9-6	1240	4082
T. B. Slick's No. 2 Franks, SW NW NE 33-9-6	1000	4092
Sinclair O & G Co.'s No. 4 Cudjo, SEc NE NW 35-9-6	1680	4035
McCullough Oil Co. et al's No.1 Butler, NW SE NE 35-9-6	2420	4142
Tidal Oil Co.'s No. 7 Fixico, NW NE NW 26-9-6	550	4110
Pure Oil Co.'s No. 10 St others, SW NE SW 26-9-6	1229	4119
Gypsy Oil Co.'s No. 7 Fixico, NE NW NE 26-9-6	115	4167
No. 5 Carter, NW NE NW 24-9-6	250	4000
No. 7 Carter, SW NW NW 24-9-6	2402	4248
Carter Oil Co.'s No. 4 Joe Carter, NW SW SW 24-9-6	300	4096
Barnsdall Oil Corp.'s No. 3 Carter, SW SE NW 24-9-6	625	4151
Independent O & G Co. et al's No. 1 Jefferson, SE SW NE 7-9-8	40	3272
No. 2 Kidd, NE NW SE 7-9-8	50	3268
Stephens County—		
Walter Gant Jr's No. 3 School Land NEc NW NE NE 36-1-9	50	2195
Tulsa County—		
Sapulpa Fuel Co.'s No. 3 Unallotted NW SW SW 32-19-11	25	1808
J. H. Hayden, SEc NW SW 6-19-10	40	2008
Glidden Oil Corp.'s No. 2 Fife, SEc NE SW 15-19-11	960	2130

Kansas

Butler County—		
T. C. Johnson et al, No. 1 Boodles, SEc SW NE 8-27-6	75	3149
Tidal Oil Co.'s No. 1 Morroll, NWc NE SE 12-27-7	50	2767
White Eagle O & R Co.'s No. 1 Blakeman, NEc SE 4-28-6	60	3036
Liggett et al, No. 1 Sturn, SWc lot 32 SEc, 19-26-8	*	2798
Allison & Fritzwilliams No. 6 Kramer, NWc SW NE 3-28-6	*	3090
Chase County—		
Empire G & F Co.'s No. 6 Lipps, c SW NW 29-18-7	¶2½	1105
Coffey County—		
Ritchey & Moore, No. 1 Pennock, c SW NW 32-21-14	*	1880
Elk County—		
Benge et al, No. 1 Nelson, c NW SE 12-31-9	¶¼	1475
Union Gas Corp.'s No. 6 Loffingwell, NWc NE NE SW 14-31-10	180	1620
Gillespie et al, No. 1 LaVille, NWc SW SE 29-31-11	*	2050
Greenwood County—		
Sinclair O & G Co.'s No. 31 Browning, c NW SW 20-22-10	125	2313
Skelly O & G Co.'s No. 18 Wick, SEc SW NW 27-22-11	100	1953
The Texas Co. & Simmons, No. 5 Fankhouser, c NWc SW 4-22-12	30	1905

To Canada's wonder naptha well by express . . .

Up in Western Canada, where wells come in under high pressure, producing Naphtha of high gravity, they demand equipment that will save these high values.

When the last well was brought in a few weeks ago, a wire came in ordering a high pressure No. 6 Smith Oil and Gas Separator to be shipped by first express.

The express charges amounted to almost as much as the purchase price of the Separator. But the saving effected by use of the Separator will repay the extra transportation cost in a few days.

Smith Separator users the world over know the value of this equipment and will not be without it.

SMITH SEPARATOR COMPANY

Tulsa S *Okla.*

NEW YORK OFFICE:
Export Representative:
Oil Field Equipment Co.
30 Church St., New York

Cable Address:
"Oilfields," New York

CALIFORNIA OFFICE:
2039 East 38th St.,
Los Angeles, Calif.

LOUISIANA OFFICE:
240 Dalzell St.
Shreveport, La.

TEXAS OFFICES:
924 Post-Dispatch Bldg.,
Houston, Texas

1414 F. & M. Bank Bldg.,
Fort Worth, Texas

LONDON OFFICE:
Perkins MacIntosh Petroleum
Tool & Boring Co., Ltd.
25 Bishopsgate

Cable Address:
"Oleborers," London

Say you saw it in The OIL WEEKLY

Company, Well and Location	Initial Production Bbls.	Depth
Davis & Hazlett, No. 8 Easlingor, SWc NW SW 34-22-13	15	1858
The Texas Co. & Simmons, No. 3 Edwardsm, A NWc NE SW 16-23-11	100	1975
Roth & Faurot, No. 10 Birkett, SEc SW 12-25-8	35	2348
Nathan et al, No. 1 Erickson, NWc NE 1-25-8	*	....
Harwood & Winters, No. 1 Jackson SEc NW 25-25-8	*	2444
Lyon County—		
McCullouch Oil Co., No. 2 L. Bradfield, SEc NE NW 25-21-10	500	2575
Marion County—		
Empire G & F Co., No. 1 Uffing, c SE NW 34-18-4	*	2747
Reno County—		
D. P. Fleeger & Mid-Kansas, No. 1 Neeley, SEc NW 35-23-7	*	4105
Russell County—		
Keys Pet. Co., No. 1 Sloan, SEc SW SE 20-13-15w	*	3400

California

Company, Well and Location	Initial Production Bbls.	Depth
Huntington Beach Townsite—		
Ahlburg Gasoline Corp.'s Huntington 3	400	3959
Paul Getty's 5	1100	3600
Julian Pet. Corp.'s Lambert 3	600	4350
Standard Oil Co. Huntington 13	70	4438
Huntington 16	175	4294
Huntington 19.	170	4348
Seal Beach—		
Marland Oil Co. Sellover-McGrath 2	2300	4741
Long Beach—		
MacMillan Pet. Products Co. 5	1350	5120
Progressive Oil Synd. 3	250	3805
A. T. Jergins Municipal 20	186	3500
Dominguez—		
Shell Co. Reyes 35	150	4155
Brea-Richfield—		
California Pet. Corp. Richfield-Consolidated 11	*	4042
General Pet. Corp Stern 7	970	4607
Stern 8	1187	4641
South Mountain—		
California Pet. Corp South Mountain 7	36	4021
Sunset—		
General Pet. Corp Midway Northern 16	125	3465
Midway—		
Richfield Oil Co. Mason 2	30	3138
Kern Front—		
Geo. F. Getty Lenhart 8	115	2167

Mountain States

WYOMING

Company, Well and Location	Initial Production Bbls.	Depth
Parco—		
Producers & Refiners Corp., No. 1, 21-21-86	*	2208
Mahoney—		
Producers & Refiners Corp, No. 3, 29-26-87	*	3070

NEW MEXICO

San Juan County—		
Coons-Hennis Syn., No. 1, 22-30-9	*	....

COLORADO

Florence—		
Rosie Oil Co., No. 2, 8-20-69	40	....

MONTANA

Kevin-Sunburst—		..
Ohio Oil Co., No. 4, SE¼ 32-35-1	50	1485
Fifty-Six Pet. Co., No. 23, NE¼ 32-35-1	100	1480
California Pet. Co., No. 19, SW¼ 28-35-2	100	1440
Queen City Oil Co., No. 21 NW¼ 4-34-2	110	1490
Bottineau-Minot Oil Co., No. 4, SW¼ 33-35-1	100	1485

Eastern States

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
Green County—		
Carnegie Natural Gas Co. Eli Pethel 1	¶2	....
Charles Bowers 1,	¶3½	....
J. D. Patterson 1	¶2	....
T. G. Phillips 1	¶2	....
People Natural Gas Co. Ross Headles 1	¶2	....
The Philadelphia Co. S. L. Lemley 1	¶2	....
Dunn-Mar Oil & Gas Co. J. M. Morford 3	5	....
J. I. Eddy & Co. J. Roup 1	¶2	3485
Washington County—		
Manufacturers Light & Heat Co. Hugh Day 1	5	....
Cowden Gas Co. Cowden 1	¶1¼	....
Walters & Co. Ahrens Heirs 1	¶½	....
McCloy & Co. F. L. Seabright 1	*	....
Hayes & Co. R. L. Carter 1	*	....
Allegheny County—		
Wildwood Oil Co. Grimmer Heirs 3	5	....
J. A. Elliott Elliott 3	*	....
Fruittsburg Field—		
W. H. Houpt Thomas Brown 1	¶3	....

WEST VIRGINIA

Roane County—		
Godfrey L. Cabot T. M. Perot 1	¶1	....
United Fuel Gas Co. Nelson Carper 1	¶1¾	....
J. C. Keffer 1	¶2	....
Morley Oil & Gas Co. Dry Creek School lot 1	¶1¼	....
J. Y. & Lawrence Young Bertha Canterberry 1	¶1½	....
Lincoln County—		
Ray & McComes J. L. King 3	¶1	....
Laurel Development Co. H. B. Lucas 2	¶1	....
Columbia Gas & Electric Co. J. & L. Sweetland 437	¶1	....
Ada Chambers 439	¶1	....
Gilbert Adkins 436	¶1	....
Harrison County—		
Clarksburg Light & Heat Co. Gore 25	¶2	....
S. D. Gore 249	¶1½	....
Conservative Oil & Gas Co. Rhoda Lyons 3	¶1½	....
Vesper Oil & Gas Co. Cletus Stout 4	*	....
Calhoun County—		
Hope Natural Gas Co. Sarah E. Sickle 1	¶2	....
Euclid Oil & Gas Co. L. L. Lynch 1	20	....
W. H. Bickel L. E. Betts 2	¶1½	....
Ritchie County—		
Carnegie Natural Gas Co. A. R. Brake 1	¶2	....
Starcher & Thornily Mary E. Metz 4	3	....
John Starcher & Co. Matts Heirs 1	5	....
Wetzel County—		
Kimble Oil Trust Co. Kimble-Murphy 1	¶¼	.....
Carnegie Natural Gas Co. Cora A. Teagarden 3	¶2	....
Isaac Eddleman 3	¶2	....
Pleasants County—		
The Philadelphia Co. Noah Farley 2.	*	....
J. S. Dotson & Co. J. D. Patterson 1	¶¾	....
Howard Ball && Co. Laura Patterson 1	*	....
Clay County—		
Virginian Gasoline & Oil Co. Lackhart 6	35	....
South Penn Oil Co. O. D. Stockley 48	30	....
Doddridge County—		
S. D. Gribble & Co. A. Stuttler 1	¶1	....
Trainer & Travis G. A. Ross 1	3	....
Marshall County—		
Manufacturers Light & Heat Co. J. R. & S. E. JJones 3	¶2	....
T. & E. Edwards 2	¶2¼	....
Marion County—		
Carnegie Natural Gas Co. Unknown 1	*	....
Julius Tennent 1	¶2¼	....
Kanawha County—		
United Fuel Gas Co. J. M. Hays 1	7	....

Company, Well and Location	Initial Production Bbls.	Depth
Tyler County—		
Dr. George T. Gale Sarah D. Thistle 12	3	....
Wood County—		
John Leeton John Copeland 3	3	....
Boone County—		
Owens Bottle Machine Co. J. Chambers 2	¶¼	....
Putnam County—		
L. R. Sweetland & Co. Maud Smith		
Mingo County—		
Red Jacket Coal Co. Fee 2	¶2	....

KENTUCKY

Cumberland-Monroe Counties—		
Baird & Hickman J. H. Morgan 4	384	300
Barren County—		
Mutual Oil Co. Pace 3	5	....
Pace 4	*	....
J. J. Sayre Hatfield 5	5	....
Hatfield 6.	5	....
Norris Bros. Sanson & Co. Berry 10	*	....
Berry 11.	4	....
Browning 1	50	....
Jones & Breeding Deckard 4	17	....
Merrifield & Hedges Dean 5	10	....
Stohr Bros Oil Corp. McGuire 4	10	....
Payne & Pedigo Pedigo 1	3	....
T. L. Gorby W. E. Steffey 1	*	....
Wood Oil Co. Mayfield 1	*	....
Floyd-Knott Counties—		
Ivyton Oil & Gas Co. Andy Coburn 2	¶2½	....
Johnson-Magoffin Counties—		
Oliver Jenkins Salyre Heirs 10	40	....
Pittsburg Trust Co. William Salyer 5	5	....
Cumberland Petroleum Co. A. A. Almy 8	1	....
Estill County—		
Superior Oil Corp. Art Campbell 4	*	....
C. O. Amsler && Co. James Oaks 1.	1	....
Wayne County—		
Porter, Abbott & Co. Oatts-Coffey 4	*	....
Lyons Oil Co. Burnett 4	*	....
Coast & Hogue Smith 1	*	....
Lawrence-Johnson Counties—		
Hope Construction & Refg. Co. J. Priest 1	¶½	....
Lee-Owsley Counties—		
C. B. Grosse Trustee Foreman 2	3	....
Kentucky-Indian Oil Co. Huntington 8	5	....
Wolfe County—		
DeJarnett & Fulks W. Tutt 1	1	....
Owensboro Field—		
Wood Oil Co. Deane & Owen 2	75	481
The Ohio Oil Co. J. C. Ellis 7	10	490

SOUTHEASTERN OHIO

Morgan County—		
Charles Woodyard Fee 2	8	....
Monroe County—		
C. R. Hamilton & Co. Handkins 1	2	....

CENTRAL OHIO

Perry County—		
Ohio Fuel Supply Co. Franklin Bank Co. 8	180	....
Sunday Creek Coal Co. Fuel 142	125	....
Cline Bros. P. Tague 1	30	....
New York Coal Co. Fee 8	25	....
Guernsey County—		
Wittmer Property John Taylor 2	365	....
Ohio Fuel Supply Co. J. R. Fulton 2	275	3554
Unknown, Mary Stapleton 1	*	....
Hocking County—		
Gordon Oil Co. Fred Thrush 3	95	....
C. Brimmer 4	*	....
Preston Oil Co. W. Marks 3	95	....
Snider Oil Co. John E. Bickel 1	10	....
Muskingum County—		
Midland Oil Co. E. M. Denney & Co. 1	180	....
Licking County—		
W. L. Brown & Co. J. A. Little Heirs 3	15	....
Hope Construction & Refg. Co. Lyman Michaels 1	....	5 ....
Fairfield County—		
Ruff, Stewart Oil & Gas Co. Graffis Heirs 1	55	....
Knox County—		
Arkansas Fuel Oil Co. L. V. Dugan 21	12	....

AXELSON MACHINE CO., *Sucker Rods, Pull Rods, Plunger Working Barrels (Pumps) etc.*— BEAUMONT IRON WORKS CO., *DREADNAUGHT Rotary Drilling Equipment, Water-Cooled Draw Works, Pumping Hoists, Traveling Blocks, etc.* — CARBIC MFG. CO., *Acetylene Gas Generators and Welding Equipment.* — DARLING VALVE & MFG. CO., *Gate and Drilling Valves, Darcova Valve Cups.* — DONOVAN BOILER WORKS, *Oil Country Boilers and Tanks.* — FRICK-REID SERVICE BELTING, *Rubber Covered and Friction Surface.* — JENSEN BROTHERS MFG. CO., *Pumping Jacks.* — NATIONAL TRANSIT PUMP & MACHINE CO., *Power and Steam Pumps.*—PACIFIC OIL TOOL COMPANY, *Hydraulic Pumping Units.* — J. P. RATIGAN, *Grips, Clamps, Beam Hangers.* — JOSEPH REID GAS ENGINE COMPANY, *Gas and Oil Engines, two and four-cycle, Band Wheel and Direct Drive Pumping Powers.*— ROSSENDALE REDDAWAY BELTING & HOSE CO., *"Camel Hair" Belting, Belt Clamps.*— WHITLOCK CORDAGE COMPANY, *Manilla Cordage, Bull Ropes and Cat Lines.* — LAPWELD AND SEAMLESS TUBULAR GOODS.

"Unconquer'd Steam" Puts on the Yoke!

ERASMUS DARWIN, granddaddy of Charles, had some ideas of his own. In **The Botanic Garden,** 1789, he wrote this prophecy:

"Soon shall thy arm, unconquer'd Steam!
afar
Drag the slow barge, or drive the rapid
car;
Or on wide-waving wings extended bear
The flying chariot through the field of
air."

Erasmus didn't mention Donovan Boilers, and how they would put the collar on "Unconquer'd Steam" and make it do remarkable things in the oil fields of the world. But Erasmus was a little absent minded about a lot of things, and anyway it was not until seventy years later that Col. Drake did his stuff in Pennsylvania.

It takes an organization like ours, with branches in many fields, to accumulate authoritative information on equipment. And we just want to say to you that we congratulate ourselves on our good fortune in handling the best oil country boiler yet devised.

The manufacturers are content to say that "Donovan Boilers are consistently good," but you haven't any idea how good that is unless you've kept a record on some Donovan. They make and hold more steam on less fuel than any boiler we know anything about. And we'd feel sorry for the whole tribe of boilermakers who depend on field jobs if all boilers were like Donovans.

Make a few inquiries before you buy your next boiler. The F-R Store in your field can tell you all about 'em.

FRICK-REID
SUPPLY CO.

Tulsa, Okla., Pittsburgh, Pa.
West of the Mississippi, Store Everywhere
East of the Mississippi, The Frick & Lindsay Co.

Company, Well and Location	Initial Production Bbls.	Depth
Ohio Fuel Gas Co. F. Kauffman 1	¶¼	....
Vinton County—		
Townsend-Watkins Oil Co. James Queen 1	3	....
Ashland County—		
The Logan Gas Co. A. C. Hazlette 2	¶¾	....
Catherine Derr 1	*	....
Ohio Fuel Gas Co. J. E. Shoudt 2..	¶½	....
Hulse & Kundtz J. D. Shiffler 1..	*	....
Medina County—		
The Logan Gas Co. Elmer Marsh 1	*	....
Empire Gas & Fuel Co. C. Kinzey 2	¶1½	....
Cuyahoga County—		
The Logan Gas Co. E. A. Jent 1....	¶2	....
Wiser Oil Co. J. Jenkins 1	¶¾	....
G. H. Stillwell 1	¶½	....
McGrath & Co. F. Saunders 1.....	¶½	....
Holmes County—		
Empire Gas & Fuel Co. E. Steele 1	*	....
Ohio Fuel Gas Co. I. Y. Miller 1	¶¼	....
Wayne County—		
Empire Gas && Fuel Co. Ora Kenney 4	¶¼	....
Warren Palmer & Co. Barton Ginter 3	*	....
John Arthur & Co. G. W. Shaffer 1	¶1	....
Athens County—		
The Logan Gas Co. W. M. Winter 1	¶½	....
NORTHWESTERN OHIO		
Wood County—		
Mattie Roush & Co. E. Stockwell 22.	10	1606
Gregg, Schulte & Lantz H. Schulte 7	2	1303
Auglaize County—		
Abbott Bros & Co. F. Davidson 1..	¶½	1492
INDIANA		
Sullivan County—		
A. R. Morris & Co. John Hunt 1	80	2174
Jay County—		
Southern Oil Co. Henry Armontrout 10	20	....
Adams County—		
Paul Schulte & Co. Edward Lugabill 3	10	....
Grant County—		
Maynard & Co. G. E. Haines 1....	*	....
ILLINOIS		
Lawrence County—		
The Ohio Oil Co. A. Buchannan 18	30	630
McDonough County—		
The Ohio Oil Co. W. F. McCutcheon 1	15	....
MICHIGAN		
Saginaw County—		
Fordney Petroleum Co. Ace Park Ball Ground 1	65	1813
The Sun Oil Co. William Scherzer 2	25	1825
Louis Voight 1	10	1859
Schaiberger Bros. & Co. Schaiberger 1	15	1829
Crescent Oil Co. B. Neumeyer 1....	15	1836

Arkansas

Irma Field, Nevada County—		
Humble O. & R. Co.'s Groves B-3, 1-14-21	45	1148
Stephens Field, Ouachita County—		
Buffalo Oil Co.'s Culp 2, 22-15-19..	20	2211
Smackover Field, Ouachita County—		
Natural Gas & Fuel Corp.'s Hill A-5, 5-16-15	¶5	2649
Smackover Field, Union County—		
Ramage et al's Lawton C-10, 10-16-15	50	2020
Roxana Pet. Corp.'s Flenniken B-5, 5-16-15	120	2369
Stewart et al's Murphy 6, 9-16-15..	65	2787
Total, 4 wells	¶5-235	
Lisbon Field, Union County—		
Lion O. & R. Co.'s Werner 7, 28-17-16	5	2168

Bureau Makes Recommendations for Drilling South of Bearpaw Mountains, Montana

THE geology of the faulted area south of the Bearpaw Mountains, in northern-central Montana, was described in a publication of the Department of the Interior (Geological Survey Bulletin 751, pages 71-114), issued in October, 1924 Since this report was published further field work done in the region by Frank Reeves, of the Geological Survey, has yielded strong evidence that the crustal disturbance accompanying the thrust faulting did not affect the lower half of the Colorado shale and the underlying formations, which contain the principal known oil-bearing sands of the northern Rocky Mountain fields. This concept of structural conditions has an important bearing on the oil and gas possibilities of the area.

It is evident that if the deeper strata were not affected by the crustal disturbance they offer little or no promise of yielding oil or gas in commercial volumes in this area. The overlying faulted formations contain porous sandstones in the proper relations to adjacent strata to act as reservoir rocks, but in most of the area these sandstones are upthrust so far along the upthrown sides of the faults that they crop out and consequently, not being sealed in, probably do not retain any hydrocarbons that may have accumulated in them. In a few localities in the eastern part of the faulted area, however, the Eagle sandstone and the sandy beds in the upper half of the Colorado shale are under sufficient cover to warrant the assumption that they may contain oil or gas in commercial quantity. Therefore, in making further tests of the tilted strata along the thrust faults, it is advisable to choose localities where the Jndith River formation or at least the Claggett shale is the lowest formation brought to the surface by the thrust faulting. A well drilled in any of these localities should be located on the upthrown side of a fault at a sufficient distance from the fault plane to insure that the Eagle sandstone and the sandy members in the upper half of the Colorado shale will be encountered in their upthrust position. Inasmuch as the average dip of the fault planes is probably about 45 degrees, the distance of the well from the outcrop of the fault should be approximately equal to the normal stratigraphic interval between the surface bed at the well site and the sand it is desired to reach. If the goal is the Mosby sandstone member of the Colorado shale, which is probably the lowest bed involved in the faulting, a well that starts in the top of the Judith River formation should be located about 2200 feet from the fault, or one that starts at the base of the Judith River 1700 feet from the fault. If the Eagle sandstone is the goal sought in the test, the site of the well should be 900 feet nearer to the fault. Although the map accompanying Bulletin 751 shows a few unfaulted anticlines, the regional study of the geology suggests the probability that they are also faulted, and this interpretation is consistent with the evidence afforded by exposures.

The experience gained from the drilling that has been done in the faulted area supports the conclusion that oil or gas need not be looked for in the sandstones of the lower part of the Colorado shale and underlying formations, for of the many wells drilled adjacent to the faults, none have found oil or gas in commercial quantity in these lower sandstones, whereas large gas wells have been obtained in the Eagle sandstone. Although many of the wells have not been drilled below the Eagle sandstone, several wells that were suitably located to test the lower formations have penetrated them without obtaining anything but slight shows of oil and gas and large volumes of water. The fact that conidtions are favorable for the accumulation and retention of gas in the Eagle sandstone makes it appear possible that oil in commercial volume may also be found in that formation.

Outside of the tidal beds along the thrust faults the only favorable structural conditions for the accumulation of oil and gas in this general area are afforded by the two small domes on the southwest side of the Little Rocky Mountains and the downfaulted blocks immediately south of the Bearpaw Mountains. The domes are due to igneous intrusion, and the disturbance is probably deep seated, so that oil and gas may be found in these domes in the sandstone members of the Colorado shale and the Kootenai and Ellis formations. The tilting of the strata in the downfaulted blocks close to the Bearpaw Mountains may offer favorable structural conditions for the accumulation of oil and gas, and the faults along the margins of these blocks will tend to prevent any hydrocarbons that may have accumulated in them from being flushed out by the plainsward movement of underground water.

Prairie Shipments

Independence, Kansas—Shipments of crude oil by the Prairie Pipe Line Company for January, 1927, reached 4,850,792 barrels. Average deliveries were 156,799 barrels daily, a material jump compared with the previous month.

SERVICE

IN the recent fire at Seminole, Oklahoma, our store with its stock was burned.

FACED with the problem of providing an uninterrupted supply of machinery parts and necessary supplies for our customers, in this busiest of oil fields, we immediately started trucks and automobiles from our other stores, loaded with the most essential items. In many instances our men drove all night to secure an article needed by a customer. This procedure was continued day and night until our stock could be replaced.

THOSE familiar with the situation at Seminole realize the tremendous difficulties encountered by reason of bad weather, bad roads, and congested traffic.

WE are grateful for the appreciation expressed by our customers on our efforts to discharge our assumed obligation of maintaining a service of supply under such adverse conditions.

OLD REP SAYS:—

Yes, sir, if a feller only keeps his eyes open part of the time these days he'll see a lot.

Republic Supply Company

OIL AND GAS WELL SUPPLIES

ROTARY AND CABLE TOOLS

WILDCATS FROM ALL SECTIONS

Kansas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Reno County—		
Fleeger et al, Neeley 1, SE corner NW 35-23-7 T.S.	*	4105
Russell County—		
Keyes Petroleum Company's Sloan 1 c SE SW SE T.S.	*	3400

DRILLING REPORT

BARBER COUNTY—Vickers Pet. Co. et al, Ott 1, SWc 30-32-14, sd 4506 ft. Shaffer O & G Co., Alexander 1, c SE 13-33-13, ts 4440-47 ft, ¶5 gas, shut in.

BARTON COUNTY—Huffin et al, Smith 1, NE SE NE 17-19-11, sd 5120 ft..

LYON COUNTY—Culp et al, No. 1, SWc SE 26-19-10, sd 960 ft. Gashe & Balliere, Stratton 1, SEc NW 32-20-13, sd 750 ft.

RENO COUNTY—Sheldon et al, Hangison 1, SEc NW 10-23-4, sd 3735 ft.

SEWARD COUNTY—Wilson et al, Son 1, c NE NE NE 14-33-33, dr 210 ft.

Oklahoma Wildcats

BECKHAM COUNTY—Magnolia Pet. Co.'s No. 1, NEc 21-9-23, location, moving in tools.

CADDO COUNTY—W. J. Hartley's Calbreath 1, SEc NW SE 28-5-12, owd, drlg 3394 ft. J. A. Abernathy's No. 1, S SW NE 23-5-12, drlg 1910 ft.

CANADIAN COUNTY—Hannum, Frank & Slick's Pazouroc 1, SW NE 29-13-5, dr 4287 ft.

CIMMARRON COUNTY — Ramsey Bros.' No. 1, c NW NE 27-5-5, dr 3710 ft. Fenton, Brokine et al's Smaltz 1, SEc NE NE 2-2-0, spudding and sd.

COMANCHE COUNTY—Mid-Kansas O & G Co.'s Cox 1, NEc SE NE 30-1-13, td 1920 ft sd.

GARFIELD COUNTY—Sinclair's Fee 1, SWc SW NE 2-20-5, dr by tools 5002 ft.

GRANT COUNTY—Ostot Dev. Co.'s Snyder 1, NEc 6-28-4, td 4546 ft to run new string of 5 inch, pulling old string. Brazell & Moses, Royce 1, SWc NW 34-28-4, sd 550 ft. Dedman Flenngan & Hennage's Sherran 1, NEc SW 16-26-3, sd 1910 ft.

KIOWA COUNTY—A. C. Varner's Boham 1, SEc SW NW NW 5-6-10, sd 1127 ft, litigation.

KINGFISHER COUNTY—Pet. Eng. Core Drlg. Co.'s Canfield 1, cNW SE 6-16-7, rig. McKenna & Crawford's Sturgeon 1, NWc SW 27-16-6, sd 2115 ft. Reiter & Foster's Davisonal 1, SWc 23-15-5, rig, T. B. Shick may take over.

KAY COUNTY—Tonkawa Dev. Co.'s Mc Daniels 1, c SE SE SE 15-25-1, hfw 2450-75 ft, sd 2535 td.

LINCOLN COUNTY—Wentz Oil Corp.'s Luckenbeal 1, SWc SE 34-17-2, fsh 4305 ft. Mid-Kansas O & G Co.'s Griwold 1, NEc NW 33-17-4, td 4534, water sd.

LOGAN COUNTY—Bryan & Emery's Scott 1, NWc SE 33-19-4, fsh 3678 ft. Carter Oil Co.'s Rogers 1, SWc NW 32-19-3, dr 4710 ft. Franklin Oil & Gas Co.'s Moore 1, SWc SE 28-18-4, sand 4059-65 ft, swab 32 bbls in 18 hrs, sand 4086-90 ft flow 40 bbls and some water per day. Haley & Pioneer's Quair 1, SWc SE 11-18-3, td 1900, rig burned down, will rebuild rig. Zingery et al's Baker 1, NWc NE NE, sd 4517 ft. T. B. Slick's Berry 1, SWc SE, 28-17-1, dr 3827 ft. Blackford O & G co.'s Lier 1, c S L N½ SE 28-16-1, sd 1675 ft, litigation.

PAYNE COUNTY—Twin State Oil Co.'s Tibler 1, NEc NW NE 23-18-1, dr 2515 ft.

NOBLE COUNTY—Geo. Miller's 101 Ransh 1, NEc 1-24-1, td 4300 dr by.

OKFUSKEE COUNTY—T. A. Johnson's leady 1, NEc SE SE 25-12-9, dr 3170 ft. J. M. Kessel's Scott 1, SW 8-12-11, dr 3310 ft.

TILLMAN COUNTY—Ossie Drlg. Co.'s Snelling 1, SEc SE SE 13-1-18, sd 1525 ft.

TEXAS COUNTY—Valeriue O & G Co.'s No. 2, SEc SE 35-5-12, ½m gas 3940-50 ft, sd 4002 ft contract depth. H. F. Wilcox's Zea 1, SWc SE 29-3-12, dr 3500 ft; Hovey 1, SE c SE 21-4-12, run 5-in 4235 ft, sd 4420 ft. Haley, Garber & Pulse's Ellison 1, NWc SE SE 4-1-12, sd 3505 ft, will deepen. Connell et al's Tensey 1, SEc NW 5-1-19, spudded, sd.

PONTOTOC COUNTY—American Oil Co.'s Roy 1, SEc NW 34-5-6, cementing 8-in, 1900 ft. Bowles & Smith's Lewis 1, c SE SW 29-5-5, sd 510 ft.

West Texas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Crockett County—		
Cranfill Bros. Oil Co.'s Harris 1..	*	3485
Ector County—		
The Exploration Co.'s J. D. Slator 1	*	4003
Runnels County—		
Red Bank Oil Co.'s Fowler 1	*	3787
Terrell County—		
Sun Oil Co.'s N. M. Scott 1	*	4020

DRILLING REPORT

ANDREWS COUNTY—Amon G. Carter et al's Cowden 1, dr 560 ft. Maer-Staniforth et al's W. S. Taylor 1, materials. J. S. Cosden et al's Ratliff-Bedford 1, lcn. Calvin-Belt et al's Ratliff-Bedford 1, lcn.

BORDEN COUNTY—Julian Pet. Co. & R. R. Penn's A. J. Long 1, elev 2488 ft, top salt 970ft, top lime 2620 ft, dr 3400 ft.

COKE COUNTY — Lipan Oil Co.'s E. C. Rawlings 1, elev 2738 ft, sd 2740 ft; Conner 1, elev 2045 ft, rig.

CONCHO COUNTY — Arkansas Fuel Oil Co.'s S. A. Hartgrove 1, making gas, dr 1310 ft. Associated Pet. Co.'s Sam Waring 1, elev 2085 ft, dr 1930 ft. Eugene Mays et al's Hartgrove 1, sd 1380 ft. Exploration Co.'s Wilson-Hartgrove 1, elev 1618 ft, sd 1680 ft. J. R. Lewis & Swoveland's Plants 1, lcn. Marland Oil Co.'s Sansom 1, sd 987 ft. Mullens-Davis et al's Martin 1, sd 610 ft.

CRANE COUNTY—Church & Fields' University 1, elev 2580 ft, top salt 1100 ft, dr 1870 ft. Bert Weekly & Church's University 1, lcn. Carl Cromwell & Jones' University 1, rig. W. E. Duffey-Cuthbert & Penn-Tex Dev. Co.'s Cowden 1, elev 2552 ft, top salt 1020 ft, dr 2240 ft. Eastland Oil Co. & J. D. Collett's University 1, completed, flowing 1850 bbls 33.3 degree gravity oil 2890-2905 ft; University 2 and 3, lcns. Gulf Prod. Co.'s Crier-McElroy 5, top salt 966 ft, dr 2025 ft; Crier-McElroy 3-A, dr 450 ft; J. T. McElroy 6, top salt 1035 ft, dr 1245 ft; J. T. McElroy 7, dr 615 ft; McElroy 1-B, rig; Lassiter-University 2, elev 2603 ft, top salt 1230 ft; top big lime 2893 ft, PBP at 2905 ft. Humble Oil & Ref. Co.'s University 1, set 12½-inch cas 345 ft. Independent Oil & Gas Co.'s University 1, lcn. Llano Oil Co.'s M. F. Hampton 1, elev 2593 ft, top salt 1000 ft, top lime 2855 ft; dr 3095 ft. Magnolia Pet. Co.'s Church 4, dr 1390 ft; Hardwick 2, rig; Hardwick 3, dk; Hardwick 4 and 5, lcns; Lassiter 2 and 3, rigs. O'Keefe 3, elev 2604 ft, top salt 1160 ft, top lime 2832 ft, flowing 355 bbls oil at 2957-67 ft; O'Keefe 4, set 8¼-inch cas 1140 ft; O'Keefe 5, sd 600 ft; O'Keefe 6, 7 and 8, lcns; Marland Oil Co.'s Cowden 2-A, top salt 690 ft, dr 2035 ft; Gibbs 2, dr 400 ft; Hughes 4-C, sd hfw 2460 ft; Hughes 6-D, dr 250 ft. Marland & F. P. Zoch's Hughes-Keith 3, elev 2581 ft, top salt 730 ft, testing oil pay 2340-60 ft. Marland-Zoch-McCamey's Hughes 2-B, spudding. Prairie Oil & Gas Co.'s University 4-A, elev 2580 ft, top salt 1140 ft, dr 2295 ft; University 5-A, elev 2581 ft, top salt 1140 ft; dr 2210 ft; University 6-A, rig. Prairie & J. D. Collett's University 1-B, elev 2529 ft, top salt 945 ft, to lime 2982 ft, dr 3520 ft. Ben Simon & Cromwell's Brookfield 1, sd hfw 2570 ft. Simms Oil Co. & Atlantic Pro. Co.'s University 2, elev 2497 ft, top salt 988 ft, top lime 2752 ft, University 3 and 4, dks; University 1-B, dr 510 ft. Stidham & Thrasher's University 1, elev 2497 ft, top salt 988 ft, top lime 2752 ft, rated as small pumper after shot 100 quarts at 2939-65 ft, td 3162 ft. The Texas Co.'s King 13, top salt 890 ft, dr 1835 ft; King 18, co after shot 130 quarts at 2318-63 ft, td 2372 ft. Tidal Oil Co.'s University 1-E, elev 2570 ft, top salt 1093 ft, set 8¼-inch cas 2550 ft; University 1-F, dr 1010 ft; University 2-F and 3-F, lcns. Henry Zweifel & Hofmeier's Cowden 1, cmt hole to dr by tools, td 2810 ft.

CROCKETT COUNTY—V. T. Bolin & Co.'s P. O. Coates 1, dr 155 ft. Cumberland Oil & Gas Co. et al's Couch 1, dr 2305 ft. W. W. Donnelly & J. D. Young et al's Pierce 1, rig. J. K. Hughes et al's L. P. Powell 2-B, fsh 2535 ft. Magnolia Pet. Co.'s Channon 2, top salt 925 ft, dr 2295 ft. Republic Prod. Co.'s Powell 2, top salt 1140 ft, dr 2450 ft. World Oil Co.'s Will Schneeman 1, dr 510 ft. J. D. Young & Carl Cromwell's University 1, sd 1365 ft; J. M. Shannon 1, top salt 920 ft, top lime 2150 ft, dr in hfw 2590 ft.

CROSBY COUNTY—El Capitan Oil Co.'s Slaton 1, dr 735 ft.

CULBERSON COUNTY—James H. Gardner et al's Radford-State 1, dr 155 ft.

JEFF DAVIS COUNTY — Humble Oil & Ref. Co.'s W. W. McCutcheon 1, cas parted 3430 ft. J. K. Hughes Dev. Co.'s J. Z. Means 1, dr 1530 ft; Means 2, lcn.

ECTOR COUNTY — J. S. Cosden et al's Connell 1-A, swab and co after shot, td 4002 ft.

FISHER COUNTY—Barbour Oil Co.'s W. A. Cross, lcn. The California Co.'s R. J. Anderson 1, ur cas with hfw at 2704-08 ft, td 2715 ft; G. C. Magenheimer 1, dr 2436 ft. Oil & Refining Co.'s Lanius 1, set cas 2405 ft. Hucony Gas Co.'s Langford 1, dr 2025 ft. Marland Oil Co.'s Hodges-Rochelle 1, dr 1350 ft. Mason Oil Co.'s W. A. Cross 1, sd 255 ft. Fred Phillips et al's C. M. Webb 1, dr 1255 ft. R. W. Rainey et al's Marberry 2, sd 2524 ft. Shamrock Pet. Co.'s et al's Weller 1, ur 6⅝-inch cas .645 ft. Stearns & Streeter's W. A. Howe 1, spudding. F. P. Zoch et al's Clayton 1, dr 2145 ft.

GLASSCOCK COUNTY—Green & Zuzak's Oxshear 1, lcn. Marland & Texon's Settles 1, sd 1005 ft. Marland & Pete Parish Co.'s Nellie Calder 1, dr hfw 3300 ft. J. S. Merriwether et al's L. S. McDowell 1, lcn. R. R. Penn's W. P. Edwards 1, materials. Plateau Oil Co.'s L. S. Bell 1, dr by tools, td 2270 ft.

TOM GREEN COUNTY—Marland Oil Co.'s Llano 1, spd and sd.

HOCKLEY COUNTY—El Capitan Oil Co.'s Ellwood 1-A, skid rig 48 ft west.

HOWARD COUNTY—Bristow & Merrilk's A. J. Hooks 1, lcn. Fred Carey et al's Chalk 1, dk. Comet Pet. Co.'s H. R. Clay 1, rotary rig. Dixie Oil Co.'s Clay 1, lcn. Francis & Brunson's J. W. Furrh 1, lcn. Gulf Prod. Co.'s Chalk 2, dr 785 ft. Humble Oil & Ref. Co.'s Douthitt 2, sd to install Climax engine, td 645 ft. Lockhart & Co. et al's Hyman-Scott 1, pumping 10 bbls oil and 20 bbls water, td 3200 ft. Magnolia Pet. Co.'s Hyman-Chalk 2, dr 950 ft; Hyman-Chalk 3, lcn; Mary Chalk 3, dr 155 ft; Mary Chalk 4, machine; Kelly-Chalk 1, lcn; Sloan-Chalk 1, lcn; G. O. Chalk 5 and 6, lcns; Owen-Chalk 5-A and 7-A, lcns; Sarah-Hyman 1, dr 1090 ft; Sarah Hyman 2, set 12½-inch cas 245 ft; Sarah-Hyman 3, lcn. Marland Oil Co.'s Bryse 1, elev 2568 ft, top salt 1285 ft, fsh 2745 ft; Otis Chalk 8, dr 1490 ft; Chalk 9 and 10, lcn; Chalk 11, sd 1301 ft; Mary Chalk 1, rig; Chalk 3-A, dr 1095 ft; Chalk 4-A, rotary rig; Chalk 5-A and 6-A, lcns; Chalk 1-B, spudding rotary; Chalk 1-C, spudding rotary; H. R. Clay 1-A, dr 1325 ft; Clay 2-A, dr 1100 ft; Clay 1-C, lcn; Harding 1, spudded and sd. Reeves & Apperman's H. R. Clay 1, testing good show oil and gas 1770 ft; Clay 2, lcn.

IRION COUNTY—Cashdollar et al's G. J. Bird 1, dr 820 ft; Abe Meyer 1, dr 1635 ft.

JONES COUNTY — Bateman & Campbell's

Teeth that BITE

During the process of being set, the two spirals of the GUIBERSON Plug act like teeth. When compressed they BITE into the walls of the well, and take a bull-dog grip that cannot be broken by gas pressure. Once set, the GUIBERSON Plug is a permanent, perfect seal against bottom water, until drilled up.

Non-porous and slow-to-deteriorate, OAKUM provides an ideal packing medium for GUIBERSON Plugs, giving an absolutely gas and water-tight pack. It is compressed uniformly from top to bottom, between the steel spirals. Patented.

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

CALIFORNIA BRANCH: 1506 Santa Fe Ave., Los Angeles
402 W. First St., TULSA
506 Trust Bldg., NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

Say you saw it in The OIL WEEKLY

Southard 1, dr 1330 ft. Cole-Hart et al's W. B. Cranston 1, dr 2330 ft. Consolidated Oil Co.'s Armand-Taylor 1, lcn. Garland & Diamond's Glynn 1, lcn. Gibson-Johnson et al's Sears 2, set 15½-inch cas 200 ft; Mrs. J. V. Wright 1, dr 2395 ft; C. M. Largent 1, sd 2215 ft. Gillette & Hickey's S. W. King 1, elev 1650 ft, ur 2070 ft; M. E. Young 1, sd 1200 ft. Grisham-Hunter Wildman Pet. Corp.'s Burchfield 1, ur 8¼ cas 2135 ft; Williams 1, dr 1980 ft. Hutson-Weaver et al's Smith 1, spudded and sd. Marland Oil Co.'s S. R. Cox 1, fsh 3591 ft; Mason-Harris 2, testing show oil 2931 ft; Larson 1, spudded and sd. Marsten Oil Co.'s Howell 1, dr 835 ft. Mid-West Exploration Co.'s Thornton 2, testing oil pay Thornton 3 and 4, rigs. Mid-Continent Pet. ta 2491-2502 ft, td 2506 ft with 1300 ft, oih; Corp.'s H. Evans 1, sd 445 ft. Vic H. Martin et al's Culbertson 1, set 8¼-inch cas 2560 ft. Muse-Robertson et al's Manley 1, dr 1705 ft. Stebbins Oil & Gas Co.'s J. M. Higgs 1, fsh 525 ft. W. G. Stough et al's J. P. Willis 1, sd 730 ft. Phillips Pet. Co.'s Mason 1, dr 430 ft; Joe Winters 3, rig; R. H. Beasley 1, dr 780 ft; Tessie-Walling 2, dr 665 ft; W. I. Thornton 1, dr 1275 ft. World Oil Co.'s Co.'s A. W. Clark 1, set cas 2012 ft; W. H. Lee 1, sd 1050 ft. Zeigler et al's J. W. Reeves 1, sd 340 ft.

KIMBLE COUNTY—Dixie Oil Co.'s Harrison 1, sd 3040 ft.

KING COUNTY—Patterson et al's Patton 1, sd 590 ft.

LOVING COUNTY—Owen-Sloan Oil Co.'s Johnson 1, lcn.

LYNN COUNTY—Hart Oil Corp.'s Edwards 1, sd 1390 ft.

MENARD COUNTY — Clark et al's Kothman 1, water trouble 425 ft. Elliott & J. R. Lewis' White 1, sd 310 ft.

MITCHELL COUNTY—Magnolia Pet. Co.'s Mary Foster 4, ur 1720 ft; W. W. Watson 2, rig. Teas & Stivers' Hardee 1-A, dr 1710 ft.

NOLAN COUNTY—A. G. Malone et al's J. B. Caryle 1, lcn. McCaskey et al's Pepper 1, rig. Peters et al's W. L. Booth 1, lcn. Stein & Greeben's L. W. Ross 1, lcn. Walford et al's H. 1. Simpson 1, lcn. Henry Zweifel & Hofmeier's Longbotham 1, dr 300 ft.

PECOS COUNTY—Arkansas Fuel Oil Co.'s Manley-Holmes 1, lcn. T. R. Cowell's J. C. Trees 1, dr 2335 ft. The California Co.'s Cordova 1, materials. Buell-Hagan et al's Southern Life Ins. Co. and Bachelor 1, dr 1655 ft; University 1, dr 1785 ft. K. Kimberlin & Pickrell's I. G. Yates 1, top salt 460 ft, set 10-inch cas 500 ft, fsh tools with show oil and gas 1255 ft. Kimberlin & Cromwell's Blackman-Scharff 1, sd 280 ft. Del Rio Synd.'s K. C. and Ft. Stockton 1, dr 660 ft. Kershaw & Livingston's Cannon 1, sd 175 ft. Mid-Kansas & Transcontinental Oil Co.'s I. G. Yates 2, dr 655 ft; Yates 3, sd 315 ft; Yates 1-B, dr 350 ft. Quinby Oil Co.'s Bennett 2, testing oil sand 1216-48 ft; Townsite 1, sd 3435 ft.

REAGAN COUNTY—Camp et al's University 1, sd hfw 3030 ft. Cope-Dalton et al's White-Moore 1, elev 2551 or 2565 ft, top salt 1091 ft, dr 1865 ft. Hiawatha Oil Co.'s University 1, elev 1831 ft, top salt 1380 ft, top lime 3310 ft, dr 4010 ft. Moody Corp.'s Sawyer 1, sd 3030 ft. Texon Oil and Land Co.'s University 6, group 2, fsh 3225 ft.

REEVES COUNTY—Deep Rock Oil Co.'s Caldwell 1, dr 875 ft. Grisham-Hunter Corp.'s State 1, elev 3250 ft, dr 3245 ft. Humble Oil and Refining Co.'s TP Fee 1-B, dr 1505 ft. World Oil Co.'s Biggs-Holder 1, fsh 1810 ft.

RUNNELS COUNTY—Associated Pet. Co. (was Bell & Moore's) W. M. King 1, spudded and sd. Bell & Moore's Ferguson 1, rig. Hill-Ladd & Yates' McMillan 1, rig.

SCHLEICHER COUNTY—Thomas-Gray et al's Ball-Robinson 1, dk.

SCURRY COUNTY—Northwest Co.'s T. C. Stinson 1, dr 3425 ft.

TAYLOR COUNTY—City of Abilene's Fee 1, sd 2265 ft. Gibson-Johnson & Oil Operators Trust's Haines-Hamilton 1, sd repairs 1120 ft; J. F. Hendry 1, lcn. Grisham-Hunter Corp.'s Huddleston 1, dr 1465 ft. Dorning & Perrine's J. A. Hammer 1, rig. Mid-West Exploration Co.'s D. Smith 1, lcn. Noodle Creek Oil Co.'s Alice Rose 1, spudded and sd. Sanger Oil and Refining Co.'s Ike Brown 1, ur 1660 ft; Cox 1, sd 2375 ft; Gillespie 1, sd 2360 ft. World Oil Co.'s J. R. Griffith 1, lcn.

TERRY COUNTY—Kingsland Oil & Potash Co.'s Brownfield 1, sd 1050 ft.

UPTON COUNTY—Gulf. Prod. Co.'s J. T. McElroy 1-C, elev 2795 ft, top salt 1655 ft, fsh 2980 ft. Curtis-Hults et al's Giddings 1, elev 2762 ft, top salt 1515 ft, dr 2600 ft. W. W. Donnelly & Marland Oil Co.'s University 1, elev 2884 ft, dr 800 ft. Sartain Oil Co.'s Mrs. C. V. Bull 1, sd, rig burned 3300 ft. Skelly Oil Co.'s O. P. Jones 1, probably junked, td 3595 ft.

VAL VERDE COUNTY—Douglas Oil Co.'s Sellars 1, set 10-inch cas 2070 ft. S. A. McCaskey's Sellars 1, dr hfw 2205 ft. O. O. Owens et al's H. Y. J. Mills 1, dr 420 ft. Transcontinental Oil Co.'s Stevenson 1, dr 3605 ft. Williams et al's Holman-McNutt 1, sd 2270 ft.

WINKLER COUNTY — Champlin Ref. Co. et al's Cowden 1, set 12½-inch cas in quick sand 560 ft. Gibson-Johnson et al's R. A. Leck 1, lcn. Gulf Prod. Co.'s T. G. Hendricks 1, set 10-inch cas 1095 ft. Ed. E. Hill-Ladd & Simon's Ambrugey 1, elev 2995 ft, top salt 1220 ft, dr 1800 ft. Humble Oil & Refining Co.'s Hendricks 1, lcn; Hendricks 1-A, lcn. Independent Oil & Gas Co.'s Hendricks 1, dr 560 ft. Llano Oil Co.'s Scarborough 1, dr 340 ft. McCullough & Marland Oil Co.'s Tobe Morton 1, dr 460 ft. R. S. Matthews et al's Cowden 1, fsh 1225 ft. Pure Oil Co.'s Central State Bank 1, lcn. Richardson & Marland Oil Co.'s Cowden 1, dr 200 ft. Skelly Oil Co.'s M. M. Leeman 1, dk. Southern Crude Oil Purchasing Co.'s Hendricks 2, rotary, sd 1235 ft; Hendricks 3, rotary rig. F. P. Zoch et al's John Sealy 1-A, elev 2709 ft, top salt 1062 ft, top lime 3200 ft, set cas 3504 ft.

Coastal Wildcats

COMPLETION

Company, Well and Location	Initial Production Bbls.	Depth
Jefferson County—		
Texas' Garrick 1	*	4060

DRILLING REPORT

AUSTIN COUNTY—Humble's Austin College 1, 7 miles NE Bellville, cutting out cas to deepen, td 1038 ft; Bellville School 1, 7 miles NE Bellville, dr 550 ft; Walton 1, 7 miles NE Bellville, capped after making around 2,000,000 ft gas from 1032 ft. R. E. Graves' Cleveland 1, Hickory Mound, wtg on cas to set over gas sand 870 ft.

BRAZORIA COUNTY—Associate's Sealburn 1, Stratton Ridge, lcn. Roxana's Pabst 2-A, Clemens dome, dr 3424 ft, sand and shale; Clemens 4, Clemens dome, dr 3161 ft, sand and lime; Allen Bernard River 1, Allen dome, bailing with oil show 4238 ft; Allen 3, Allen dome, dr 5182 ft, shale. Texas' Sweeney 1, Danbury, rigging up.

FORT BEND COUNTY—Sun's Farmer 2, Boling, dr 2405 ft, shale. Texas' Farmer 2, Boiling, rigging up; Felder 3, Boling, dr 2550 ft, sandy lime. Gulf's Beard 3, Long Point, dr 2019 ft, sand and shale.

GOLIAD COUNTY—Houston Oil Co.'s Pettus 3, 10 miles west Goliad, rigging up; Parks 2, 8 miles east Goliad, dr 750 ft.

HARRIS COUNTY—P. S. Griffith's Fee 2, 12 miles north of Houston, dr 2419 ft, gumbo and lime.

JEFFERSON COUNTY—Gulf's Bordages 3, Fannett, dk. Rio Bravo's T. & N. O. 101, ½ mile north Spindle Top, cutting out liner to deepen, td 3408 ft. Hines Bros.' Roberts 1, ½ miles east Spindle Top, fsh 2795 ft. Tatum et al's Combest 1, 3 miles north Beaumont, spd and sd. Texas' Garrick 2, ¼ mile north Spindle Top, abn 4060 ft. J. T. Miller Drilling Co.'s Edwards 1, 3 miles south Needland, rigging up.

LIBERTY COUNTY—Union Sulphur Co.'s Kyle 4, Moss Bluff, lcn. Barlow et al's Minchcliffe 1, Excelsior, dk.

MATAGORDA COUNTY — Gulf's Craig 8, Hawkinsville, dr 3556 ft, shale; Parkinson 2, Hawkinsville, dr 1016 ft, gumbo; Sanborn 2, Hawkinsville, dr 3514 ft, sandy lime. Rycade Oil Corp.'s Meyers 3, Markham, cored gas show 3027 ft; Kountze 4, Markham ,set 6⅝ cas to test 8 ft oil sand, td 3500 ft. Deering-Houston Gulf Gas Co.'s Gray 1, Markham, dr 3250 ft. Sheppard Mott Oil Co.'s Murphy 1, Hawkinsville, dr 2865 ft, gumbo.

WHARTON COUNTY — Rich-Humphreys' Malone 1, 5 miles west Wharton, sd 2008 ft.

San Antonio Wildcats

BEXAR COUNTY—McClanahan's No. 3 Sodrok, dr. B. F. Thompson's No. 1 Weites, aband at 2260 ft.

CALDWELL COUNTY—United North & South Oil Co.'s No. 1 Kelly, dr; No. 1 Tiller, dr.

DUVAL COUNTY—Associated Oil Co.'s No. 1 Sutherland, dr. Humble Oil & Ref. Co.'s No. 11 Singer, dr; No. 7 Walsh, dr; No. 5 Schallert, dr; No. 1 Koehler, section 400 dr. Houston Oil Co.'s No. 2 Benavides, set casing at 1673 ft; No. 6 Benavides, testing at 1832 ft. O. W. Killam's No. 3 Lopez, dr; No. 4 and No. 5 Lopez, dr. Magnolia Pet. Co.'s No. 1 Spear, dr; No. 1 survey 21, testing; No. 1 survey 174, dr. Geo. Marshall's No. 1, sec 458 testing. Maurer & Dugan's No. 1 Hoffman, dr. O'Hern & Seacord No. 5 Benavides, producer at 1753 ft. National Oil Co.'s No. 1 Ball, dr. G. B. Pickett's No. 1 survey 230, dr. Simms Oil Co.'s No. 1 Schallert, dr.

GONZALES COUNTY—Martin Oil Co.'s No. 1 Preston, dr. R. J. Kerchival et al's No. 2 Billings, dr.

KLEBERG COUNTY—Humble Oil & Ref. Co.'s No. 2-A, dr below 2100 ft. Monahans et al's No. 1 blk 27, dr. Texas Company's No. 1, spudded in. Witherspoon Oil Company's No. 1, dr.

MEDINA COUNTY—Alamo Drilling Co.'s No. 1 Kennedy, dr. Pat. Armstrong's No. 1 Lacey, dr. Arnett Oil Co.'s No. 4 Nixon, dr; No. 5 Nixon, dr. Carl Switzer's No. 1 Zerr, dr. California-Medina Co.'s No. 1 Rothe, dr. Fennell et al's No. 1 survey 115, dr. Gibson & Walsh's No. 1 Ottem, dr. Ina Oil Co.'s No. 1 Finger, dr. R. R. Lewis's No. 1 Keller, dr at 2008 ft. Medina Syndicate's No. 2 Mitchell, dr. Swayze, J. A.'s No. 1 Oeffinger, dr. about 150 ft.

STARR COUNTY—Danciger Oil Co.'s No. 1 Newman, dr. Deckle & McCarley's No. 1 Garcia, dr. Hafley's No. 1 Garcia, dr; No. 1 Skidmore, dr.

ZAPATA COUNTY—Buffalo-Erie's No. 3 F. Martinez, loc. Charco Rendondo Oil Co.'s Nos. 59, 62, 63 share 2, dr in. Hill & Associates' No. 1 Villa Grant, dr. Killam, O. W.'s blk 5, sec 69, preparing to dr. Duke Langford's No. 1 Charco Rendondo Grant, dr. Howard Staggs et al's No. 1 Hinnants, dr.

Louisiana Wildcats

COMPLETIONS

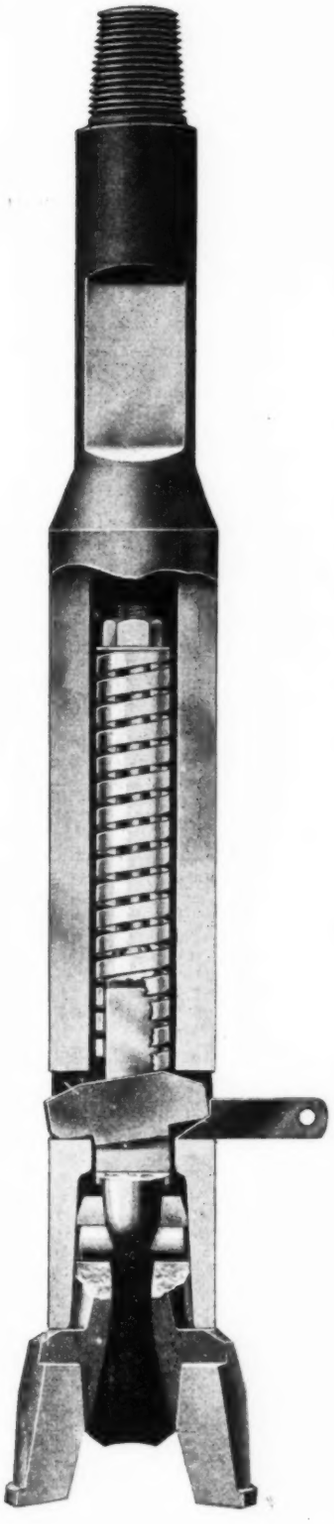
Company, Well and Location	Intial Production Bbls.	Depth
Grant Parish—		
Tunica Pet. Co.'s L. & A. Oil Co. 22, 16-8-3w	*	1885
Jackson Parish—		
Grigsby & Co.'s Adams 1, 22-17-4w	*	3356
Sabine Parish—		
Arkansas Fuel Oil Co.'s Logan Oil Co. 1, 33-10-12	515	3210
Winn Parish—		
Humble Oil & Ref. Co.'s Tremont B-1, 10-10-1w	*	1601

DRILLING REPORT

BIENVILLE PARISH—Kimbrough et al's Cargyle 1, 27-15-8, sd 1550 ft.

BOSSIER PARISH—Anderson et al's Bulkley 1, 9-20-13, sd 2040 ft. Bahan et al's (Amerada) Gray 1, 27-23-12, set 12½-inch cas 455 ft. Bloomquist et al's Jones 2, 23-18-11, dr 490 ft. Clark & Norton's Ford 1, 32-23-13, rig. Doern et al's Thomas 1, 9-22-11, water flow 860 ft. Magnolia Pet. Co.'s Dodson 1, 15-23-12, lcn. Palmer Corp.'s Bossier 1, 9-16-11, dr 3365 ft. Sligo Synd.'s Webb 1, 24-17-12, sd 2380 ft. Southwestern Gas & Electric Co.'s Dodson 1, 16-23-12, bldg dk. Tubbs et al's

It's a Wilson



Reaming jobs made easy

WILSON PERFECTION UNDERREAMER

Study these features:

1. Strong body—no dove tails.
2. Single-piece body—no sub.
3. Cutters braced wide apart.
4. More stock in cutters, having broad face.
5. Broad shoe-trip shoulder.
6. Rugged tee-bar prevents loss of cutters.
7. No trips to set or break.
8. Fewest parts.
9. Unnecessary to oil or grease parts.
10. Full expanse of cutters gives well-reamed hole.
11. Runs in and out of casing easily.
12. Can be pulled into casing and run out again without setting cutters.
13. Cutters collapse completely and cannot snag in pipe.
14. Easy to redress cutters.
15. Can be dismantled and assembled quickly.
16. Body correctly tempered.
17. Special analysis steel.
18. Master workmanship.
19. Permanent design that has stood the test of years.
20. Built by Underreamer Specialists.

Wilson Oil Tools Corp.
DISTRIBUTORS FOR
Wilson & Willard Mfg. Co.

Factory and Distributor's Office — It's a Wilson — 2301 East Vernon Ave
Los Angeles, Calif.

SALES OFFICES:
Tulsa, Okla., 409 Atlas Life Bldg.
Houston, Texas 219 Post Dispatch Bldg.
Amarillo, Texas, 1501 Polk Street

Jacobs 1, 26-20-13, r 1170 ft. Woodley & Collins' L. & A. 2, 14-23-12, dr 2450 ft.

CADDO PARISH—Ackerman et al's Payne 1, 35-23-16, rig. Big Lake Oil Co.'s Rhodessa 1, 23-23-16, r 1507 ft. Dixie Oil Co.'s Robertshaw 81, 13-21-15, ¶20, 3635 ft. Slattery 10, 27-21-15, dry 3669 ft. Gilliam Synd.'s Sellington 1, 27-21-14, coring 2375 ft. Magnolia Pet. Co.'s Dillion 16, 24-21-15, pulling 4½-inch casing 3765 ft, to deepen. The Texas Co.'s Glassell 2, 14-20-15, dr 2745 ft.

CATAHOULA PARISH — S. D. Hunter's Tensas Delta 2, 21-9n-7e, rig. Lochnager Oil & Gas Co.'s Beazley 1, 26-9n-6e, dr 2760 ft.

CALDWELL PARISH—Magnolia Pet. Co.'s Lee 1, 16-22-8, dr 1340 ft. Mitchell et al's Wilburn 1, 23-19-7, dr 1255 ft. Root Ref. Co.'s Cheatham 1, 19-22-6, fsh 2420 ft.

DE SOTO PARISH—Alden Oil Co.'s Powell 1, 13-11-10, sd 2210 ft. Clark & Melat's Billingsley 1, 12-11-16, running sand pump, 2690 ft. Craige et al's Riggs 1, 27-15-13, sd 2380 ft. Dixie Oil Co.'s Jenkin 1, 9-12-11, dr 4980 ft. Helm & Jarmon' Joyner 1, 28-12-11, show of oil, 2952 ft. Magnolia Pet. Co.'s Mason 1, 28-12-11, sd 2519 ft. Snapp et al's Lanier 1, 7-11-11, dr 4½-inch plug 2655 ft. A. H. Tarver's Mathews B-2, 13-12-11, dr 1950 ft.

EAST CARROLL PARISH—T. A. Snell's Henderson 1, 53-18-13e, dr 1350 ft.

FRANKLIN PARISH—Arkansas Fuel Oil Co.'s Ship 1, 22-11-7e, lcn. Exploration Co.'s Moore 1, 12-11-6e, sd 2110 ft. Harrell & Hall's Duncan 1, 20-13-7e, sd 2057 ft. Robinson & Long's Baker 1, 3-15-7e, sd 1443 ft.

GRANT PARISH—Billeaud et al's Ball 1, 19-7-1e, sd 2400 ft. Gulf Ref. Co.'s Swope A-1, 6-9-1e, fsh 2213 ft; Swope A-2, 17-9-1e, set 10-inch cas 158 ft. Humble Oil & Ref. Co.'s L. & A. Oil Co. 11, 20-9n-2w, dk.

JACKSON PARISH—El Dorado Chief Oil Co.'s Jones 1, 3-14-4w, sw 3356 ft. Ferguson Trust's Matrin 1, 3-15-1e, sd 3254 ft. Houseman et al's Norton 1, 34-15-3w, sd 400 ft. Louisiana Pet. Co.'s Davis 3, 22-16-4w, dr 1070 ft.

MOREHOUSE PARISH — Standard Oil Co.'s Interstate Cooperage 3, 9-19-8e, rig.

NATCHITOCHES PARISH—Humble Oil & Ref. Co.'s Louisiana Long Leaf Lumber Co. A-2, 26-6-8w, dr 180 ft. Lawson et al's Clark-Morse 1, 23-5-6w, dr 2000 ft. Ohio Oil Co.'s L. & A. 1, 23-13-6w, dr 2230 ft. Three League Oil Co.'s Long 1, 3410-8w, rig. Weaver Bros.' Frost 1, 25-7-7w, dr 600 ft. Wenzel et al's Brown 1, 38-11-7, dk.

RAPIDES PARISH — Minnesota Oil Co.'s Wattermark 1, 7-5-3w, sd 1718 ft.

RED RIVER PARISH — S. M. Cagle's Posey 1, 23-13-10, rig. Phillips Pet. Co.'s Long Bell 1, 16-12-8, lcn. The Texas Co.'s Marsten 1, 16-14-11, sd 2621 ft.

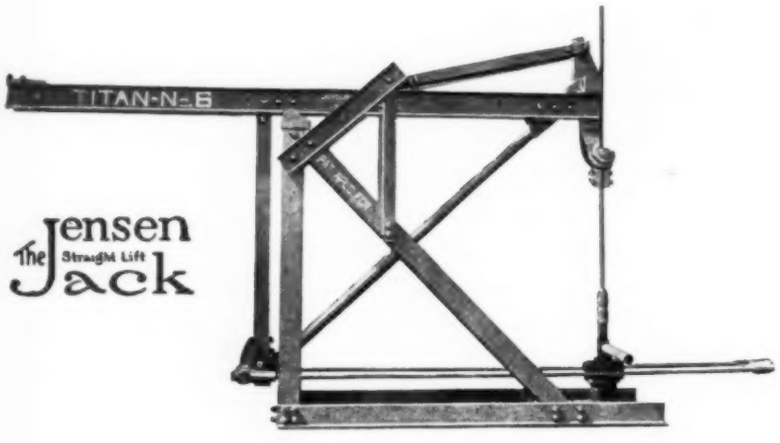
RICHLAND PARISH—Aarnes et al's Hawley 1, 3-18-9e, sd 2587 ft. Gulf Ref. Co.'s Marshfield 1, 30-17-6e, dr 220 ft; Wayne 1, 36-17-5e, dr 505 ft; Weyman 3, 2-17-8e, dr 1025 ft. S. D. Hunter's McCoy 1, 29-16-5e, dk; Seibert 1, 1-16-5e, dr 2295 ft. Louisiana Pet. Co.'s Binion 1, 22-17-6e, set 6-inch cas 2283 ft. Oliver et al's Hatch 1, 2-15-5e, set 6-inch 2316 ft. Palmer Corp's Colvin 1, 33-17-6e, set 6-inch cas 2270 ft. Ruston Drilling Co.'s O'Neill 1, 36-17-6e, dr 925 ft. Tex-La Carbon Co.'s Broughton 1, 1-16-6e, dk.

SABINE PARISH—Emlet et al's Bowman Hicks 3, 8-7-12, sd 4070 ft; Bowman-Hicks 7, 11-7-14, coring 2465 ft; Sabine Lumber Co. 1, 8-7-1e, dk. Godchaux et al's Giaque 1, 35-5-1e, sd 1518 ft. Magnolia Pet. Co.'s Louisiana Long Leaf 1, 16-611, dr 2825 ft. Lewis Clark Pet. Co.'s Wyatt 1, 23-5-12, dr 2920 ft.

UNION PARISH—Camette et al's Tugwell 1, 21-22-1e, sd 740 ft. Clark Creek Oil Co.'s Frost-Johnson 2, 9-23-1e, sd 1162 ft. Rhodes et al's Futch 1, 28-23-2w, dr 1125 ft.

WEBSTER PARISH—Davis et al's Lee 1, 22-22-9, coring 2760 ft. Humble Oil & Ref. Co.'s Davis B-5, 23-21-10, dr 3925 ft. Labore et al's Bruner 1, 30-19-10, sd 537 ft. Louisiana Oil Ref. Corp.'s Davis 1, 23-21-10, set 8⅝-inch cas 3045 ft. Ohio Oil Co.'s Bank of Cotton Valley 4, 22-21-10, gas 4573 ft. Woodley Pet. Co.'s Cox 1, 22-21-10, dr 3610 ft.

WINN PARISH—Dodge et al's Tremont 1, 65-13-3w, sd 1030 ft. Greer et al's Bodcau 1, 9-11-4w, re-setting 10-inch cas 155 ft, td 2183 ft. J. C. Long's Milam 1, 26-13-3w, dr 1385 ft. Ohio Oil Co.'s Edenborne 1, 4-12-1w, to set 6-inch cas 3957 ft. Standard Oil Co.'s Tremont 1, 1-12-2w, dr 1870 ft.



Jensen Jacks easy to pull

EVERY Jensen Jack is a straight lift Jack. And every Jensen Jack has the additional and important advantage of being easy to pull. One pumping power handles a maximum number of wells when those wells are equipped with Jensen Jacks. Less fuel is required in the power house. There is less strain on equipment.

And bear in mind this: There is a Jensen Jack for every well. We illustrate here a Jensen Counter-Balanced Jack with a working stroke of thirty inches, whereas our new Titan Straight Lift Under Pull Jack has six and one-half feet of straight line motion, and a working stroke of five feet.

We suggest that you send for our Catalog of Jensen Straight Lift Jacks, or inquire at the Frick-Reid Store in your field.

Phone 221

JENSEN BROTHERS MFG. CO.

Nowata, Oklahoma

Sold by Frick-Reid Supply Co.

Arkansas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Cleveland County—		
Kingsland Oil Co.'s Hall 1, 31-10-10	*	1070
Ouachita County—		
Seagraves & Moody's Moline Timber Co. 1, 8-11-17	*	2002

DRILLING REPORT

BRADLEY COUNTY—Arkansas Fuel Oil Co.'s Arkansas Lumber Co. 1, 25-16-12, sd 3144 ft. Johnston & Adams' Southern Lumber Co. 1, 12-12-12, set 10-inch cas 298 ft. Magnolia Pet. Co.'s Arkansas Timber Co. 1, 35-15-11, dr 3975 ft.

COLUMBIA COUNTY—Arkansas Fuel Oil Co.'s Barge 1, 14-18-22, rig. Columbia Oil Synd.'s Whitehead 1, 14-19-23, sd 500 ft. Haynes et al's Runyon 1, 3-16-21, set 12½-inch cas 150 ft. Ky-Ark Pet. Co.'s Doss 1, 29-19-20, sd 3018 ft. Scott Phillips' Davis 1, 6-18-20, sd 2145 ft.

LA FAYETTE COUNTY — Ken-Saw Pe. Co.'s Red River 2, 5-20-24, sw 2840 ft.

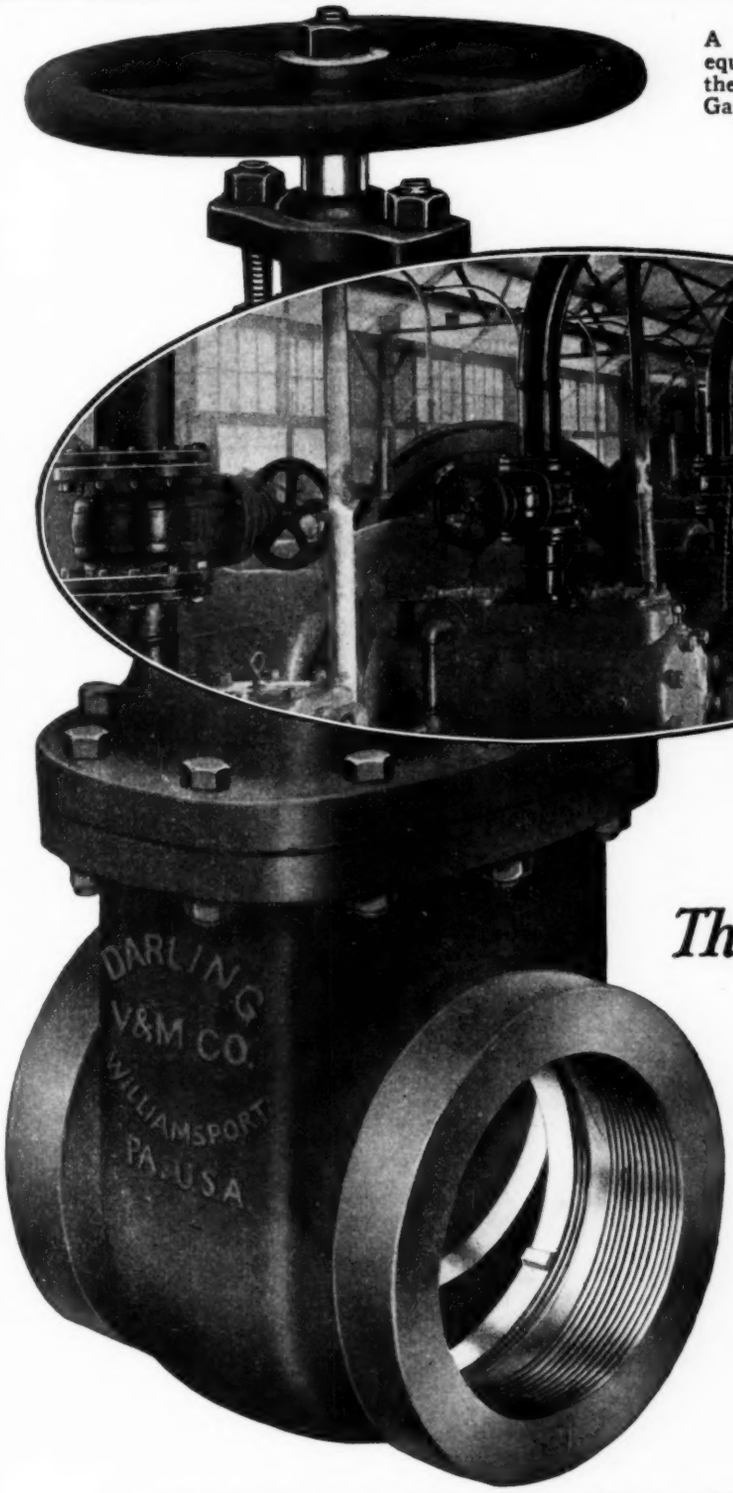
LINCOLN COUNTY — Pine Prairie Oil Co.'s Carter 1, 33-10-6, dr 30 ft.

MILLER COUNTY—Lenze et al's Dale 2, 28-15-26, dr 2745 ft. W. D. Nash's Priest 1, 26-14-27, sd 3550 ft.

NEVADA COUNTY — Advance Oil Co.'s Whitehead 1, 14-19-23, lcn. Furen et al's Cross 1, 12-13-22, set 10-inch cas 78 ft; Rhodes 1, 22-12-21, dr 1000 ft. Humble Oil & Refining Co.'s Bodcau 4, 9-15-22, fsh 3595 ft. Prescott Oil Corp.'s Adams 1, 11-12-20, sd 1900 ft.

OUACHITA COUNTY — Brown & Shepherd's Manolite 1, 2-18-13, dr 1980 ft. A. T. Grayson's Reynolds 1, 21-14-17, fsh 1740 ft. Harrell et al's Ponder 1, 9-12-17, sd 1680 ft. J. D. Reynolds' Chandler 1, 3-14-18, rig. Sunny Jim Oil Co.'s Berry 12, 33-15-15, setting 4½-inch cas 3920 ft.

UNION COUNTY—Bondurant et al's Gar-



A Battery of Compressors, equipped with Darling Valves, in the plant of the Southern Counties Gas Company, Ventura, California.

Choose the Right Valve- Then Standardize!

Oil men who have figured the economy of Darling long lived Valves over a period of years are of the opinion that Darlings save most and serve best.

If valves have been your problem write today for catalogue and details of construction.

DARLING VALVE & MANUFACTURING COMPANY
WILLIAMSPORT, PA.

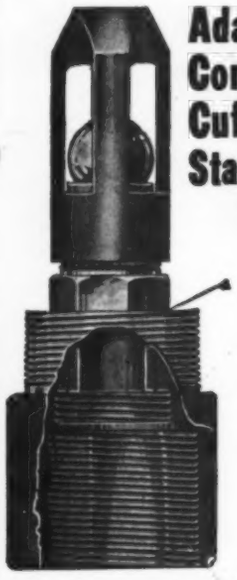
NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:
Frick-Reid Supply Co.
International Supply Co.
Atlas Supply Co.
Petroleum Supply Co.

California Distributor
Petroleum Equipment Company, Los Angeles

DARLING
GATE VALVES

Say you saw it in The OIL WEEKLY



Adams' Combination Cuff and Standing Valve

A non-blowout valve used in wells where troubled with gas. It is screwed into an ordinary top cuff on the bottom of the working barrel, and having no leathers, it saves the resetting and turning of leathers as on the ordinary lower valve. Easier to Install, Lasts Longer. Sizes 1¼, 2¼, 2¾ and 3¾.

WRITE FOR PRICES

Southern Brass Mfg. & Plating Company

6614-20 Harrisburg Blvd., Houston, Texas

The Tret-o-lite Process is Economical

Recovery cost only a few cents a barrel. Practically no power expense—no payment of royalty—minimum labor. Our nearest field representative is at your service.

Wm. S. Barnickel & Co.

St. Louis, Mo.

ner 1, 8-18-12, r 2635 ft. Calgo Oil Co.'s Primm 1, 9-18-17, dr 3105 ft. Grimes & Jones' Williams 1, 8-18-14, dr 840 ft. Imperial Oil & Gas Co.'s Goodwin 1, 26-17-16, pulled 4½-inch 3118 ft; Marine Oil Co.'s Winn 1, 11-18-13, dr 2310 ft; Thompson 1, 10-18-13, set 4½-inch cas 2645 ft. Ohio Oil Co.'s Crain 1, 1-17-14, dr 1655 ft. Phillips Pet. Co.'s Dennis 1, 6-18-13, sd 3048 ft. Simms Oil Co.'s Ballard 1, 9-18-13, to set 8¼-inch cas 2530 ft. Superior Oil Co.'s Cordell 1, 5-18-13, flowing 3000 barrels, 98 per cent sw; Thorpe et al's Peck 1, 22-18-13, sd 2701 ft. Wingfield et al's Green 1, 15-19-13, dk; Morrison 1, 5-19-13, washing 2664 ft.

Rocky Mountain Wildcats

WYOMING

COMPLETIONS

Parco—
Producers & Refiners Corp.'s No.F[illegible] 2210
Elk Basin—
Midwest Ref. Co.'s No. 2 1898

DRILLING REPORT

WYOMING—Graybeal Oil Syn.'s No. 1, Graybeal, NE¼ 16-28-80, dr 2550 ft. Kinney-Coastal Oil Co.'s No. 1, Mease dome, SW¼ 27-6-3, sd. Zola Oil Co.'s No. 1, Crooks Creek, NW¼ 25-27-93, ready to abn. J. E. Scanlan Interest's No. 1, Big Horn County, 24-51-93, dr 633 ft. Bridger Oil Co.'s No. 1, Sage Creek, SE¼ 21-1-1, sd 1335 ft. West Zimmerman Butte Oil Co.'s No. 1, Zimmerman Butte, NE¼ 28-44-93, sd 2785 ft. California Oil Co.'s No. 2, Garland, NE¼ 15-55-97, dr 3650 ft. Prairie Oil & Gas Co.'s No. 3, Mahoney, 34-26-88, dr 2300 ft. Producers & Refiners Corp.'s No. 1, Parco, 21-21-86, completed as water well, td 2210 ft; No. 1, Muskrat, 34-34-92, rig completed; No. 1, Medicine- Bow, 25-21-79, dr 1925 ft; No. 5, Wertz, 7-26-89, dr 3620 ft; No. 1, Murphy dome, 8-43-91, fsh 2975 ft; No. 1, Tensleep, 13-46-89, lcn; No. 7, Big Sandy Draw, 14-32-95, dr 2535 ft; No. 5, Big Sandy Draw, 10-32-95, dr 3365 ft; No. 2, Garland, 24-56-89, sd 2641 ft. Carter Oil Co.'s No. 1, Nowood, SW¼ 5-48-90, dr 1700 ft; No. 2, Billy Creek, SE¼ 17-48-82, co 4290 ft; No. 1, Horse Creek, NW¼ 35-17-70, dr 3220 ft. Midwest Refining Co.'s No. 1, Dutton Creek, 1-18-70, testing production 4940 ft; No. 1, La Barge, SE¼ 21-27-113, sd 1032 ft; No. 2, Elk Basin, 31-58-99, abn 1898 ft. Union Oil Co. of California's No. 1G, Fremont county, SE¼ 27-1-1, dr 1450 ft; No. 1C Fremont county, NE¼ 15-1-1, dr 3320 ft; No. 1B, NW¼ 28-43-91, sd 2565 ft. Ohio Oil Co.'s No. 5, Rock River, 3-19-78, dr 2400 ft; No. 1, Corley dome, 3-43-93, dr 1055 ft; No. 2, Byron 33-56-97, dr 2315 ft. Texas Production Co.'s No. 6, Maverick Springs, 26-6-101, dr 120 ft.

NEW MEXICO—Frio Oil Co.'s No. 2, Curry county, 11-5-35, dr 400 ft. Prairie Oil & Gas Co.'s No. 1, Eddy county, 10-17-31, running casing to shut off water, td 2916 ft. Texas Production Co.'s No. 1, Chaves county, 29-17-18, co 2830 ft. Maljamar Oil & Gas Co.'s No. 1, Lea county, 16-17-32, dr 4122 ft. Exploration Co.'s No. 1, Lea county, 25-19-35, dr 835 ft. Portage Oil & Gas Syn.'s No. 1, San Juan county, 17-29-13, dr 1775 ft. Hammond Oil Co.'s No. 1, Eddy county, 15-16-25, dr 595 ft. Navajo Oil Co.'s No. 1, Torrance county, 36-4-6, dr 600 ft. Midwest Refining Co.'s No. 1, Hospah dome, 1-17-9, dr 1550 ft. Union Oil & Mining Co.'s No. 2, San Juan county, 8-29-9, co 2955 ft. William Petroleum Co.'s No. 5, Eddy county, 17-18-28, dr 3115 ft. San Juan Petroleum Co.'s No. 1, San Juan county, 17-29-13, dr 735 ft. Henderson, Dexter & Blair's No. 1, Lea county, 34-17-33, dr 4145 ft. McAdoo Petroleum Co.'s No.1, DeBaca county, 16-1-7, sd 2385 ft. Coons-Hennis Oil Co.'s No. 1, San Juan county, 23-30-9, wosr 50 ft from old location. Southwestern Development Co.'s No. 1, San Juan county, dr 1215 ft.

Colorado—Northeastern Colorado Oil Co.'s No. 1, Willard, 36-8-55, dr 2008 ft. Moffat Petroleum Co.'s No. 1, Moffat county, 13-4-92, dr 3825 ft. Florence Petroleum Co.'s No. 3, Fremont county, 19-19-69, dr 1330 ft. Marland Oil Co.'s No. 1, Moffat county, 34-4-92, dr 3500 ft; No. 1H Moffat county, 16-3-91, dr 2340 ft. Texas Production Co.'s No. 1 Moffat county, 27-3-94, co 3310 ft; No. 2, Rio Blanco county, 31-2-102, trying to stop cave, td 2831 ft. Platte Valley Petroleum Co.'s No. 1, Weld county, 24-6-61, dr 2020 ft. Midwest Refining Co.'s No. 2, Rio Blanco county, 30-2-102, sdtr 2350 ft; No. 1, Moffat county, 22-4-92, fsh 3180 ft. Yuma Valley Oil Co.'s No. 1, Trapshooter structure, 11-1-44, dr 3162 ft.

UTAH—Utah Petroleum Corp.'s No. 1, Gibson, 1-30-20, dr 1110 ft. Empire Gas & Fuel Co.'s No. 1, Gibson, 6-30-21, fsh 575 ft. Boulder Knoll Oil & Gas Co.'s No. 1, Boulder Knoll, 17-34-24, dr 1722 ft. Armstrong Oil Co.'s No. 1, Crescent, 17-22-19, dr 1424 ft. Francis Oil Co.'s No. 1, Hulkito, 36-41-19, sd 1278 ft.

Southern California Wildcats

ALAMITOS HEIGHTS—Pan-American Pet. Co.'s Naples 1, dr 4610 ft.

ATHENS — Union Oil Co.'s Mosier 1, dr 4658 ft.

BANDINI — Pan-American Pet. Co.'s Bandini 1, dr 4660 ft.

BOYLE HEIGHTS—Haskell M. Breen's P. A. S. F. 1, sd 1400 ft.

CLEARWATER — Clearwater Pet. Corp.'s 1A, sd 1400 ft.

CLAREMONT—Claremont Oil & Gas Co.'s No. 1, co 1130 ft.

COYOTE-WEST —Bastanchury Ranch Co.'s No. 1, stg cmt 3438 ft.

DAVIDSON CITY—California Well Drilling Co.'s Del Amo, dr 4400 ft.

DOMINGUEZ—Dominguez Extension Co.'s No. 1, stg cmt 4670 ft.

DOWNEY—C. F. Ackers' No. 1, dr 245 ft.

EAGLE ROCK—Calwin Oil Co.'s No. 1, fshg 6123 ft.

EL SEGUNDO—Southern California Drilling Co.'s No. 1, sd 4400 ft.

GARDENA—Circle Oil & Gas Co.'s No. 1, sd 3360 ft.

WINWELL—Winwell Oil Co.'s No. 1 stg 5586 ft.

IRVINE—Calny Oil Co.'s No. 1, stg 4247 ft.

LAWNDALE—Smith Pet. Co.'s Johnson 1, dr 5653 ft.

LANCASTER—John B. Harding's No. 1, loosening csg 1860 ft.

LONG BEACH—Miller-Haley's No. 1, sd 4865 ft.

NEWHALL-SAUGUS—George W. Johnson's Wickham 1, dr 2378 ft. W. W. Stabler's Castaic 1, dr 3352 ft. Temple-Lefevre's Castaic 1, sd 2107 ft.

POTRERO—General Pet. Corp.'s Smith 1, rigging rotary. George F. Getty's Cypress 1, completed rig; No. 2, bldg rig. Paul Getty's Cypress 1, lcn; Cypress 2, lcn.

RESEDA—Pan-American Pet. Co.'s Seson 1, dr 5848 ft.

SAN FERNANDO—Standard Oil Co.'s University 1, dr 5245 ft. W. O. Brubaker's San Fernando 1, stg 2698 ft.

SAN JOAQUIN HILLS—Bardeen Oil Co.'s No. 3, idle 1938 ft. D. & B. Oil Co.'s Amar 1, stg cmt 3560 ft.

SAN JUAN CAPISTRANO—Norswing & Halbertson's Spitz 1, sd 3892 ft. Ed. W. Robinson's Carr 1, re-cmt 2414 ft.

SUNSET BEACH—General Pet. Corp.'s Lomita 1, dr 3987 ft.

TELEGRAPH CANYON—Quadra Pet. Co.'s M. J. & M. 1, stg 4210 ft.

TOPANO CANYON — Standard Oil Co.'s Austin 1, dr 2060 ft.

VAN NUYS COUNTY — Van Nuys Community Oil Co.'s No. 1, sd 3860 ft.

RIVERSIDE COUNTY—Banning Oil Co.'s No. 1, sd 974 ft. Corona Oil & Gas Co.'s No. 1, sd 1550 ft. Spindletop Oil Synd.'s No. 1, cmt 2615 ft. Trabuco Oil Co.'s No. 1, dr 1915 ft.

SAN BERNARDINO COUNTY — Arrowhead Dev. Co.'s No. 1 sd 1550 ft. Burgess & Goodale's Riggins 1, prep to plug 2600 ft. Como Oil Co.'s Cajon 1, sd 1380 ft. Colton Terrace Oil Co.'s No. 1, dr 1120 ft. Hesperia

METRIC METERS

At the Oil Capital's Headquarters

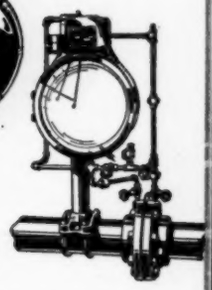
It is the logical result of experience in the outlying oil and gas districts, that these Metrics should be installed in the very heart of Tulsa at the Mayo.

From this famous gathering place for the industry, out to the most isolated leases in Oildom, thousands of Metric Meters are reporting production and consumption of gas and oil with the characteristic accuracy for which they are renowned.

METRICS put SURE —in— MEASUREMENT

METRIC METERS

WESTCOTT & GREIS, Inc.
Sales Service
Dallas
Tulsa
Los Angeles



METRIC METAL WORKS

of the American Meter Company-Inc.

ERIE - PENNSYLVANIA - U-S-A

Oil & Gas Co.'s No. 1, bailing 2700 ft. Mahala Oil & Gas Co.'s No. 2, sd 5080 ft.

SAN DIEGO COUNTY—Cardiff Oil Corp.'s Turner 1, dr 1987 ft. Oceanside Oil Co.'s Dunn 1, sd 3210 ft. Randall's well, dr 1500 ft.

Northern California Wildcats

COMPLETION

Sespe-Fillmore—
Gillette-Howard's Grant Elkins 1.... 5 4160

DRILLING REPORT

KERN COUNTY—

ANTELOPE PLAINS—W. H. Davis's No. 1 dr. 2061 ft.

BAKERSFIELD—Gulf Oil Corp.'s KCL 1, dr 1560 ft.

BELRIDGE—Union Oil Co.'s Colm 1, rigging rotary.

BUTTONWILLOW — Milham Exploration Co.'s Kern 1A, stg cmt 2361 ft.

COMANCHE POINT—Kern 29 Oil Co.'s No. 1, sd 2440 ft.

DEVILS DEN—Devils Den Prod. Co.'s No. 4, co 1140 ft. Louis Lucier's No. 1, sd 780 ft. Marathon Oil Co.'s No. 1, dr 4390 ft. Robbins Oil Co.'s No. 1, sd 2280 ft. R. H. Sayers' No. 1, rig.

ELK HILLS—McAdams Pet. Co.'s No. 1, dr 1842 ft. Interstate Oil Corp.'s No. 1, sd 5156 ft. Naval Reserve Oil Co.'s No. 1, sd 3676 ft.

GOULD HILLS—A. J. Bomke's No. 2, stg 610 ft. Carolina-Western's No. 1, dr 790 ft. L. E. Westrich's No. 1, dr 1415 ft. Rhoads Oil Co.'s No. 1, dr 1445 ft.

McKITTRICK—Abbott Pet. Co.'s No. 1, dr 1802 ft. Lacy-Esper Pet. Co.'s No. 1, dr 3265 ft. Ridge Oil Co.'s No. 1, dr 3300 ft. Sisson-Wisdom's No. 1, sd 970 ft.

SUNSET—Fresno-Sunmaid's No. 1, sd 4200 ft. Gore Exploration Co.'s No. 1, sd 2070 ft.

SHALE HILLS—Nelson & Mulford's No. 1, rig. Oildale Oil Co.'s No. 1, dr 510 ft.

TEMBLOR HILLS—Hovey Hills Oil Co.'s No. 1, sd 2510 ft. Hagar-Denison-Jones' No.1, prep to plug 1066 ft. Painted Hills Oil Co.'s No. 1, stg susp 500 ft.

TAHACHAPI-MOJAVE—Crusaders Oil Co.'s No. 1, pulling csg 2282 ft. John B. Harding's No. 1, dr 440 ft.

WASCO—Main Oil Co.'s No. 1, sd 5304 ft.

CLOVIS—Fresno-Madera Oil Co.'s No. 1, sd 3760 ft. W. W. Taylor's No. 1, temp susp 2100 ft.

HURON—Associated Oil Co.'s No. 2, building rig.

JACALITOS DOME — Marland Oil Co.'s Mitchell 1, dr 1660 ft.

RAISIN CITY—Fresno-United Oil Co.'s No. 1, dr 3788 ft.

WARTHAM—Bald Mountain Drilling Co.'s No. 1, sd 905 ft. Progressive Oil Co.'s No. 1, sd 1106 ft.

KINGS COUNTY—

KETTLEMAN HILLS.— Chanslor-Canfield-Midway Oil Co.'s No. 1, material on ground. General Pet. Corp.'s No. 1, dr 1789 ft. Hugh McPhail's No. 1, sd 1972 ft. Milham Exploration Co.'s No. 1, lcn. South Coalinga Oil Co.'s No. 1, dr 1900 ft.

VENTURA COUNTY—

CAMARILLO—Standard Oil Co.'s Camarillo, dr 4626 ft.

CASITAS-OJAI—Miley Exploration Co.'s Casitas 2, dr 380 ft.

HOPPER CANYON—Bishop-Buckeye's No. 2, sd. Hopper Canyon Oil Co.'s No. 1, dr 5000 ft.

MOORPARK-SIMI—Shell Co.'s Berlywood 2, dr 1000 ft.

MONTALVO—Standard Oil Co.'s Montalvo 1, dr 3280 ft.

PIRU—Superior Oil Co.'s Pena 1, dr 2216 ft.

RINCON—Montecito Oil Producers' No. 1, sd 3200 ft.

SESPE-FILLMORE—Sespe Oil Co.'s Smith 2, sd 4003 ft.

WHEELER CANYON—Wheeler Canyon Oil Co.'s No. 1, sd 4520 ft.

VENTURA DIST.—Associated Oil Co.'s V. L. W. 1, stg cmt 5959 ft; D. & L. grading. Chanslor-Canfield-Midway Oil Co.'s Hobson 1A, fsh 5855 ft; Hobson 1B, dr 560 ft. Milham Exploration Co.'s Sexton 1, fsh 7092 ft. Rio Grande Oil Co.'s Canet 1, dr 3620 ft. Star Pet. Co.'s Star-Canet, dr 3210 ft.

SANTA BARBARA COUNTY—

GOLETA—Miley Exploration Co.'s Goleta 1, dr 2278 ft; Goleta 3, dr 220 ft.

SAN LUIS OBISPO COUNTY — Arroyo Grande Pet. Co.'s No. 1, sd 4250 ft. Barneyberg Oil Co.'s No. 1, sd 4500 ft. Carlisle Oil Co.'s No. 1, sd 2680 ft. Mapes Holding Co.'s No. 1, susp 560 ft. Paso Robles Oil Co.'s No. 1, sd 1007 ft. Richfield Oil Co.'s No. 1 building road. Western Refining Co.'s No. 1, stg susp 3012 ft.

MONTEREY COUNTY — Harriman-Jones Oil Co.'s No. 1 sd 4616 ft. Petroleum Securities Co.'s No. 1, dr 1311 ft.

TULARE COUNTY—Martin Pet. Co.'s No. 1, stg susp 1670 ft. Wm. C. Resser's No. 1, susp 1815 ft. Walkin-Delano's test, dr 1300 ft.

SONOMA COUNTY—Shell Co. of Cal.'s Murphy 1, prep to drill out 3864 ft.

Standard of California Raises Dividend Rate

San Fra. cisco.—At a meeting of the Board of Directors of the Standard Oil Company of California held February 1, the regular dividend rate was increased from an annual basis of $2.00 per share to $2.50 per share, and a regular quarterly dividend of 62½ cents per share was declared on the outstanding capital stock of the company payable March 15th, 1927, to stockholders of record February 15, 1927, and an extra dividend of 12½ cents per share was declared, payable March 15, 1927, to stockholders of record February 15,

Pattin Combination Geared Power

Complete information on this modern pumping outfit will be gladly mailed on request

Strong—Well Made —Reliable

—Note These Features!

1. Spur Gears are cut from the solid steel and run very quietly.
2. Clutch Hub is of steel,—and the pinion gear cut from solid steel.
3. Engine crankshaft has an O. B. bearing cast on the bed plate and is self contained.
4. Lever Clutch is mounted on engine shaft,—is fitted with wood shoes, and will carry the heaviest loads without slipping.
5. One large oil reservoir on disc pin oils the complete outfit.
6. Built in 15 and 20 H. P. sizes, also 8 and 12 H. P. single disc.

PATTIN BROTHERS COMPANY

MARIETTA, OHIO

Manufacturers of

Gas Engines
Pumping Powers
Water Pumps.

Air and Gas Compressors
Vacuum Pumps
Oil Country Boilers
Torpedo Reels and Clamps
Shackle Irons

Steel Storage Tanks
High Pressure Tanks
Howe Casing Heads

Say you saw it in The OIL WEEKLY

PERMITS GRANTED FOR NEW WELLS

Weekly Comparison of New Wells

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week Ending Feb. 5	Previous Week	Total This Month	Total This Year	This Week Last Year	This Month 1926	Total Same Date 1926	Year Total 1926
Arkansas	9	7	9	41	28	28	91	940
California	31	24	31	133	31	31	171	1,273
Louisiana	15	11	15	83	23	23	110	1,318
Kansas	26	30	26	143	24	24	189	1,745
Oklahoma	72	94	72	550	71	71	462	5,165
Texas	177	269	177	1085	146	146	909	12,158
Mountain States	13	7	13	53	..	..	..	....
Total	343	442	343	2088	323	323	1932	*22,599

*Mountain States omitted.

OKLAHOMA

Beckham County—Magnolia Petroleum Co.'s No. 1 Beagle, in the southwest of the northwest of the northwest of 28-9n-23w. Bucy & Clay's No. 1 Hawkins, in the northeast corner of the southwest of the northwest of 21-9n-23.

Caddo County — Corton Trust Co.'s No. 7 Wade, in the center of the west line of the southwest of the southeast of 2-5-9.

Carter County — Magnolia Petroleum Co.'s No. 1 Carter in the southeast corner of the southwest of the 14-1-3. Humble Oil & Refining Co.'s No. 3 Dixon in the northwest of the southwest of the southwest of 18-1-3; No. 10 Jordan, in the northeast of the southwest of the southwest of 18-1-3; Magnolia Petroleum Co.'s No. 10 Adams, in the northwest of the northeast of the southeast of 3-2-3. Atlantic Oil Producing Company No. 2 Lyles, in the southeast of the northwest of the northwest of 11-2-3. Atlantic Oil Producing Co.'s No. 1 Gladney, in the southeast of the northeast of the northeast of 16-2-2.

Cleveland County—G. Brown No. 1 Alexander, in the center of the northwest of 7-9-1.

Creek County—Elson Cooper & Carter Oil Co.'s No. 1 Williams, in the southwest corner of the southeast of 27-19-8. Silurian Oil Co.'s No. 12 Starr, in the center of the east line of the northeast of the southeast of 8-18-7. Shaffer Oil & Refining Co.'s No. 2 Jones, in the southwest corner of the southeast of the northwest of 26-18-7. Olean Petroleum Co.'s No. 3 McGilbra, in the northeast corner of 30-14-8. Sunray Oil Corp. et al's No. 1 Townlot, in the northwest corner of the southeast of the northeast of the northeast of 6-18-12; No. 1 Townlot, in the southeast corner of the northeast of the northeast of 6-18-12; No. 1 Townlot in the northwest corner of the northeast of the northeast of the northeast of 6-18-12; No. 1 Townlot, in the southwest corner of the northeast of the southeast of the northeast of 6-1812. Savoy Oil Co.'s No. 1 Townlot, in the southwest corner of the southeast of the northeast of the northeast of 6-18-12; No. 1 Townlot in the norheast corner of the southwest of the northeast of the northeast of 6-18-12. T. T. Blakely's No. 1 Scott, in the southeast of the northeast of the northwest of 23-14-10. Cumberland Petroleum Co.'s No. 1 Berryhill, in the center of the east line of the northwest of the southeast of 18-17-11e.

Garvin County — Magnolia Petroleum Co.'s No. 1 Tusey, in the northeast corner of the southwest of 31-1-3.

Grady County—Stogner et al's No. 10 McGaughtry, in the southeast corner of the northeast of 23-5-8. Briscoe & Hall, No. 1 Sledge, in the southeast corner of the southwest of 6-3-5. Stogner et al's No. 1 McKee in the center of the south line of the southwest of the southwest of 14-5-8. Magnolia Petroleum Co.'s No. 3 Polson, in the northwest corner of the southwest of the southwest of 27-3-5. Clark & Cowden's No. 1 Kilgore, in the northeast corner of the northwest of the northwest of 27-3-5. Briscoe & Hall, No. 1 Carmichael, in the southwest of the northeast of the northwest of 35-3-5.

Kay County—National Union Oil Co. and Marland Oil Co.'s No. 2 Glasgow, in the northwest corner of the southwest of the northwest of 6-26-1. Marland Oil Co.'s No. 1 Van Winkle, in the southeast corner of the southwest of 30-27-2. Harris & Hahan No. 4 Jackson, in the southeast corner of the northwest of the southeast of the west corner of the northeast of the southwest of 29-28-1.

Muskogee County — C. F. Finefield No. 1 Jobe, in the northwest corner of the southeast of 12-15-18. H. W. Kiskaddon No. 1 D. D. Drew in the southeast corner of the northeast of the northeast of the southwest of 33-15-16.

Okmulgee County—J. W. Roberts et al's No. 2 Carter in the northwest of the northeast of southeast of 10-15-14.

Osage County—Marland Oil Co.'s No. 2, in the southeast corner of 27-25-9; Marland Oil Co.'s No. 1, in the southwest corner of the southeast of the southeast of 27-25-9. Indian Territory Illuminating Oil Co.'s No. 358, in the northwest corner of the southwest of 27-25-8. Kewanee Oil & Gas Co.'s No. 4, in the southwest of the southeast of the southeast of 34-27-6. Pueblo Petroleum Co.'s No. 2, in the southwest corner of 14-21-8. Tidal Osage Oil Co.'s No. 22, in the northwest of the southeast of the southwest of the northwest of the northwest of 9-24-12. 59-Osage Oil Co.'s No. 37, in the southeast corner of the southwest of the northwest of the northwest of 9-24-12.

Payne County — Magnolia Petorleum Co.'s No. 1-a, in the southwest corner of the northwest of 5-19-6.

Pottawatomie County — Magnolia Petroleum Co.'s No. 1 Banta, in the northwest of the northeast of the southeast of 14-7-4. Magnolia Petroleum Co.'s No. 1 Green, in the northwest of the southwest of the northwest of 13-7-4; No. 1 Cherry, in the southeast corner of the southwest of 13-7-4; No. 1 Clour, in the northeast of the northwest of the southeast of 11-7-4; No. 1 Billington, in the southwest corner of the northwest of 11-7-4.

Seminole County — Tidal Oil Co.'s No. 7 Carter in the southwest of the northwest of the southwest of 24-9-6. Tidal Oil Co.'s No. 1 Harjo, in the southwest o fthe northeast of the southwest of 25-9-6; No. 8 Fixico, in the southwest of the northeast of the northwest of 26-9-6. Pure Oil Co.'s No. 2 Strothers "B" in the northeast of the northwest of the northwset of 36-9-6. Indian Territory Illuminating Oil Co.'s No. 1 Mills, in the southwest corner of the northeast of 31-9-7. Mid-Continental Petroleum Corporation No. 3 Taylor, in the northwest of the southwest of the southeast of 10-8-6. Barnsdall Oil Corporation No. 2 Murrow, in the southeast of the southwest of the southwest of 11-8-6. Magnolia Petroleum Co.'s No. 1 Emarthla, in the southwest corner of the southeast of 13-8-6. Carter Oil Co.'s No. 3 S. Walker, in the southeast of the southwest of the southeast of 15-8-6. Indian Territory Illuminating Oil Co.'s No. 9 Livingston, in the northwest corner of 15-8-6. Indian Territory Illuminating Oil Co.'s No. 2 Wilmouth in the northwest of the northeast of the northeast of 15-8-6; No. 3 Milmouth, in the southeast of the northeast of the northeast of 15-8-6; No. 1 Burden, in the northwest of the southwest of the southwest 23-8-6; No. 2 Barnett in the southwest corner of the northwest of 24-8-6. Dixie Oil Co.'s No. 4 I. Walker, in the southwest of the northeast of the northwest of 32-8-8.

Stephens County—Ellis Drilling Co.'s No. 7-"B" Bridenthal, in the center of the south line of the southeast of the southeast of the northeast of 34-1-8. R. S. Scott's No. 1 James, in the northwest of the southwest of the southeast of 12-1-4.

Tulsa County—Glidden Oil Corporation No. 3 A Fife, in the southwest corner of the northwest of the southwest of the southeast of 15-19-11. Glidden Oil Co.'s No. 2 A. Fife, in the northwest corner of the southwest of the southeast 15-19-11. E. R. Minshall et al's No. 6 Fife in the northeast corner of the northeast of the southeast of the southwest of 15-19-11; No. 5 Fife, in the northeast corner of the southeast o fthe southwest of 15-19-11. E. H. Cornelius No. 1-a Charles in the northeast corner of the southwest of the northwest of 11-19-13.

Wagoner County—J. F. Hoff No. 1-a McIntosh, in the southeast corner of the southwest of 35-19-15e.

KANSAS

Butler County—Empire Gas & Fuel Co.'s No. 74 Koogler, in the southwest corner of the northeast of the northwest of 20-26-5. Phillips Petroleum Co.'s No. 2 Tatum, in the northeast corner of the northwest of 9-27-6; No. 1 Oldsbury, in the southeast of the northeast of the northeast of 17-27-6.

Cowley County—Tidal Oil Co. & Skelly Oil Co.'s No. 3 Wallace, in the southwest corner of the southeast of the southwest of 15-32-4; T. B. Slick No. 2 Dibbensin, the northwest corner of the southwest of the northeast of 22-32-4. Roth & Faurot's No. 1 Townlot, in the southwest corner of the northeast of 22-32-4. Suter & Adams No. 1 Brane, in the southeast corner of the northeast of the northwest of 22-32-4; Lewis et al's No. Day, in the southeast corner of the northwest of the northwest of 25-34-6.

Ellis County—Mid-West Refining Co.'s No. 19 Reidell, in the northwest corner of the southwest of the southeast of 27-13-16. Keys Promotion Co.'s No. 1 Gerstner, it he southwest corner of the northwest of 13-13-18.

Greenwood County — Roxana Petroleum

Corp.'s No. 1 Hood, in the southeast corner of the southwest of the southeast of 14-22-11. Roxana Petroleum Corp. et al's No. 2 Hood, in the southwest corner of the southeast of the southeast of 14-22-11; No. 2 Sheets, in the northwest corner of the northeast of the northeast of 23-22-11. Rogers and Manhattan Oil Co.'s No. 6 Allen, in the northwest corner of 18-23-11. Roth & Faurot's No. 11 Birkot, in the northeast corner of the southwest of 12-26-8; No. 4 Welch, in the southwest corner of the southeast of 12-25-8. Magnolia Petroleum Co.'s No. 3 Klein, in the northeast corner of 28-26-9.

Reno County—Mississippi Valley Oil Co.'s No. 1 Griffin, in the center of the southeast of 19-22-7. Findeiss & McLandfin No. 1 Crotts, in the southeast corner of the southwest of 8-24-7. Hortman & Skaer's No. 1 Dunn, in the northeast of the southwest of the southeast of 28-23-8.

Rice County — Mississippi Valley Oil Co.'s No. 1 Trotter, in the center of the northeast of 34-21-7.

Summer County—Vickers Petroleum Co. & Johnson, No. 3 Shore, in the southeast corner of the northeast corner of the southeast of 24-3-2; Roxana Petroleum Company No. 2 Mason in the northeast corner of the southeast of the northeast of 25-31-2. Amerada Petroleum Corporation No. 1 Buffington in the southeast corner of the southwest of the northwest of 14-32-2. Indian Territory Illuminating Oil Company No. 2 Norris in the southeast corner of the southwest of the northeast of 17-32-2.

Woodson County—Sullivan et al's No. 1 Dye, in the northeast corner of the southeast of 2-24-13.

LOUISIANA

Acadia Parish—Cline, Smith & Cline, P. O. Box 35, Lake Charles, La., Conklin No. 5, 45-9s-2w, 528 ft N and 573 ft W of SE corner of section.

Bossier Parish—Mr. J. R. Bahan et al, 414 Ricou-Brewster Bldg., Shreveport, La., G. T. Mays No. 1, 27-23-n-12w, 1320 ft S and 330 ft E of NW corner of section. Harrell Drilling Co. and B. A. Ferrell, care Inn Hotel, Shreveport, La., Atkinson No. 1, 3-18n-12w, 400 ft S an d150 ft E of NW corner SW¼ of SW¼. Woodley & Collins and Bethany Oil & Gas Co., 409 Giddens-Lane Bldg., Shreveport, La., J. W. Dodson No. 1, 16-23n-12w, 330 ft N and 330 ft W of SE corner NE¼ of SE¼.

Caddo Parish — Mr. J. R. Bahan, 414 Ricou-Brewster Bldg., Shreveport, La., M. R. Welbourne No. 1, 4-17n-16w, 660 ft N and 1980 ft E of SW corner of section; M. R. Welbourne No. 2, 4-17n-16w, 660 ft N and 660 ft E of SW corner of section. Dixie Oil Co., Slattery Bldg., Shreveport, Dillon No. 83, 14-21n-15w, 1570 ft N and 380 ft W of SE corner of section; Dillon No. 84, 13-21n-15w, 915 ft S and 2220 ft E of NW corner of section. Gulf Ref. Co. of Louisiana, Shreveport, Ferry Lake, No. 265, 28-20n-16w-, 2740 ft W anr 1020 ft S of NE corner of section. Owl Oil Company, Greenwood, Wilburn No. 2, 4-17n-16w, 660 ft N and 660 ft W of SE corner of section. Wenzel & Taggart, 421 Ardis Bldg., Shreveport, Thomas No. 4, 15-20n-15w, 1126 ft N and 1305 ft W of NE corner of NE¼.

Morehouse Parish—La Del Oil Prop., Inc., Monroe, Fee No. 38, 21-20n-4e, 330 ft S and 660 ft W of NE corner of section.

Ouchita Parish—Mr. C. W. Easterling, Monroe, Sicard Inv. Co. No. 1, 18-18n-4e, 3027 ft N and 3370 ft E of southerly corner of Sec.

Red River Parish—S. M. Cagle, Box 857, Shreveport, R. E. Posey No. 1, 23-13n-10w, 330 ft N and 330 ft E of SW Cor of NW¼.

Richland Parish—Mr. S. D. Hunter, Monroe, McCoy No. 1, 29-16n-6e, 200 ft S and 200 ft W of E¼ Cor of Sec.

ARKANSAS

Columbia County—Arkansas Fuel Oil Co.'s Barge 1, 14-18-22, 1120 ft S and 300 ft E of NWc NE¼.

Lincoln County — Pine Prairie Oil & Gas Co.'s Carter 1, 33-10-6, 200 ft N and E of SWc of section.

Nevada County—Dixie Oil Co.'s Atkins 1, 9-14-21, 510 ft E and 150 ft S of center of section.

Ouachita County—Gulf Ref. Co.'s Goodwin 13, 32-15-15, 740 ft N and 1958 ft E of SWc of section; Umstead A-24, 33-15-15, 1980 ft N and 1020 ft W of SEc of section.

Union County — Hollyfield et al's Giller 8, 10-16-15, center of north line NE¼ SE¼. Magnolia Pet. Co.'s Childs 1, 8-16-16, NWc SE¼ SE¼. Gladys Belle Oil Co.'s Cook 11, 16-16-15, NEc NW¼ SE ¼ NE¼. Sam Richardson's Lawton 4, 10-16-15, center of south line N½ S½ SW¼ SW¼.

CALIFORNIA

Belridge—Carneros Oil Co.'s No. 68, 31-28-21. Union Oil Co.'s Colm 1, 24-28-20.

Brea Olinda—Shell Co.'s Orange 15, 2-3-10. General Pet. Corp.'s Tonner 8-A, 6-3-9. Union Oil Co.'s Stearns 69, 1-3-10.

Dominguez—Shell Co.'s Reyes, 37, 33-3-13.

Huntington Beach—Auburn Oil Co.'s No. 1-A, 35-5-11. Ruether & Graham's No. 1, 10-6-11. California Pet. Corp.'s Buck 3, 28-5-11. Harry E. MacAdam's Lester 1, 10-6-11. Wilshire Oil Co., Inc.'s H. B. 16, 10-6-11; No. 11, 10-6-11; No. 13, 10-6-11.

Kern County—Huntington-Hawthorne Oil & Gas Co.'s Barry 3, 35-23-18.

Kern River—Petroleum Securities Co.'s No. 4, 22-28-27. George F. Getty, Inc.'s Tegeler 12, 22-28-27.

Los Angeles County—Spadra Oil Co.'s No. 7, 34-1-9.

Midway—Interstate Oil Corp.'s Perris 6-A, 15-32-23. Honolulu Consolidated Oil Co.'s No. 87, 8-32-24; No. 7, 8-32-24. North American Oil Cons. Co.'s No. 43, 30-31-24; No. 9, 33-31-24.

McKittrick—H. H. Bell's No. 2, 4-30-22.

Mt. Poso—Shell Co.'s Glide 1, 1-27-27.

Richfield — California Pet. Corp.'s Richfield Cons. 13, 34-3-9.

Sunset—Union Oil Co.'s Boss 3, 10-11-23.

Here's Safety Insurance At MINIMUM COST

The HOSMER Blow-Out Preventer

This device is heavily constructed and capable of withstanding enormous pressures. It prevents ghastly, costly blow-outs, even where the gas pressures are exceptionally high. Many operators, due to past experience, make this appliance standard equipment on every well in gas territory. It is far better than insurance, but at that it is far more economical.

"B-R" Real Service, 24 Hours every day

Get our descriptive circular and records of performance on many "gas" holes. Made to fit all standard casing from 6¼" to 15½". Special sizes built to requirements.

BAASH-ROSS TOOL COMPANY

8843 BOYLE AVENUE PHONE DELAWARE 2446

LOS ANGELES CALIFORNIA

BRANCHES

Long Beach—Brea—Ventura—Taft—Rosecrans

P. O. Box 694, Houston, Texas.

Phone—Preston 4270

Seal Beach—Standard Oil Co.'s San Gabriel 10, 3-5-12. Marland Oil Co.'s Bixby 15, 11-5-12.

Sespe—Big Six Pet. Co.'s No. 1, 19-4-19.

Ventura—General Pet. Co.'s Barnard 11, 21-2f-3-23. Shell Co.'s Taylor 19, 28-3-23.

MOUNTAIN STATES

COLORADO

Panuco Exploartion Co.'s No. 2, SW¼ 10-29-69. Left Hand Oil Co.'s No. 1, 33-3n-70. Loftus Petroleum Co.'s No. 1, NW¼ 34-19-69.

NEW MEXICO

Coons-Dennis Sydn.'s No. 2, 22-30-9. Continental Oil Co.'s No. 23, 12-29-19. Marland Oil Co.'s No. 1, W½ 11-20s-30e. S. S. Beardsley's No. 1, SW¼ 15-17s132e.

WYOMING

A. A. Tyler's No. 1, NE¼ 8-32-73. Union Oil Co. of California's No. 1, NW¼ 22-37-101.

UTAH

Wolf Petroleum Co.'s No. 1, lot 4, 3-36n-113w. California Petroleum Co.'s No. 1, lot 12, 3-26n-113w. Alta Devilspeak Mining Co.'s No. 1, NW¼ 17-43s-15w.

MONTANA

Prairie Oil & Gas Co.'s No. 1, 23-3-1. Kalispell Oil Co.'s No. 2, SE¼ 22-35-1; No. 3, SE¼ 22-35-1.

TEXAS

Archer County—Simms Oil Company, Magnolia Bldg., Dallas, Burleson-Turbeville 6, B 142, R. Carson sur, 300 ft No. of No. 5. J. T. Richardson 1, B 9, T. McCoy sur. Texas Co. & Consolidated Oil Co., Wichita Falls, J. A. Lowe 1, S 2, S. P. Ry sur, 150 ft to S and W lines. Mid-Kansas Oil Gas Co., Tulsa, A. J. Lowe 6, S 3, I. Holman sur, 1050 ft to E and 150 ft to S line. American Ref. Co. & Burleson & Chenault, Wichita Falls, J. H. Turbeville 11, B 150, R. Carson sur, 482 ft to E and 10 ft to S line. J. W. Noland, Box 1666, Wichita Falls, P. Browning 1, 87-88, TE&L sur, SW corner.

Brown County—F. L. Sawyer et al, Southern Hotel, Brownwood, D. E. Walker 1, S 30, HT&B sur, 660 ft to N and W lines. Sam Henderson, Cross Plains. J. W. Phillips 1, B 133, E. M. Tanner sur, 160 ft to N and W lines. Gibson Oil Corp., Brownwood, W. G. Waite 2, D. B. Vernon sur, 450 ft to N and 150 ft to E line; 5, 450 ft to N and 150 ft to W line; 6, 300 ft S of No. 2; 7, 150 ft to N and 500 ft to W line; 3, 150 ft to N and E lines; 4, 250 ft to S and 150 ft to E line. L. J. Shire 1, No. 635, J. C. Ryan sur, 150 ft to N and E lines; 2, 150 ft to S and E lines. Phillips Petroleum Corp., Bartlesville, Okla., J. H. Prater 6, S 145, W. L. Swain sur, 352 ft N of No. 3. Texas Co., Cisco, R. Hickman 14, S 783, T. Benson sur, 300 ft N of No. 13; 15, 300 ft N of No. 14. Broderick, Calvert & McGinley, First Natl Bank Bldg., Fort Worth, J. W. Newton 3, No. 623, R. Honeycutt sur, 750 ft to N and 150 ft to W line. Tidal Oil Co., W. T. Waggoner Bldg., Fort Worth, J. T. Hodnett 8, No. 784, J. W. Harris sur, 400 ft E of No. 6. Humble Oil & Ref. Co., Cisco, R. Hickman 11, T. Benson sur, 1082 ft to N and 586 ft to W line. D. C. Wooldridge 11, S 157, E. T. Ry sur, 150 ft to S and W lines. A. W. Armstrong 7, J. Delgado sur, 934 ft to N and 602 ft to W line. J. T. Hodnett 6, J. M. Harris sur, 300 ft N of No. 1; 5, 300 ft N of No. 6. J. T. Hodnett 12, J. M. Harris sur, 400 ft E of No. 11.

Bee County — Nichols & White, Box 589, Beeville, R. T. Hicks 1, B 19, Hicks & Hall sur, NW corner.

Bexar County — Schimmel Petroleum Corp., Fort Worth, G. Limon 4, No. 266-272, A. McSnyder sur, 500 ft SE of No. 2.

Callahan County — Broderick & Calvert, First Natl. Bank Bldg., Fort Worth, J. H. Boen 1, No. 237, V. C. S. L. sur, 150 ft to center of E line. Humble Oil & Ref. Co., Cisco, M. Alexander 1, S 23, E. T. Ry sur, 330 ft to N and 2598 ft to E line. Power & Clifford, Dallas, R. L. Williams 22, T. M. Alvord sur, 160 ft to W and 1050 ft to S line. C. E. Starr, Baird, Williams 1, S 68 E&D Asy. sur, 500 ft to E and 200 ft to S line. A. L. Derby, Wichita Falls, S. S. Diller 1, S 48, L. A. L. sur, 150 ft to N and 450 ft to W line. Warren-Hayes Oil Corp., Cisco, H. H. Ramsey 1, S 2, Seale & Morris sur, 150 ft to S and E lines. Ira Rinehart, Box 427, Baird, S. G. Hobb 1, S 237, S. C. Pittman sur, 150 ft to N and 2573 ft to E line. McCamey, West & Hill, Rising Star, J. E. Jones 1, S 39, D&D sur, 150 ft to N and E lines. B. R. Floyd, May Hotel, Baird, W. P. West 1, S 152, BBB&C sur, 150 ft to N and E lines. Consolidated Oil Co., Wichita Falls, S. A. Hearn 8, B 129, BBB&C sur, 300 ft N of No. 3.

Coleman County — Amerada Petroleum Corp., Cisco, J. W. Harris 7, S 6, J. Saunders sur No. 162, 440 ft W of No. 4. Smythe & Leverman, 2305 Lincoln Ave., Fort Worth, H. W. Kingsbury 1, S 495, J. A. Cleveland sur, 750 ft to E and 450 ft to S line. Shaw, Fox & Adams, Burkett, W. M. Key 5, A. Wickson sur, 300 ft S of No. 4. J. W. Quinn, Coleman, E. Green 1, J. Barnicoat sur, 150 ft to N and 350 ft to W line.

Cooke County — F. E. Skinner, 3529, Asbury, Dallas, E. Vogel 1, J. Trussell sur, 430 ft to E line. American Ref. Co., Inc., Wichita Falls, J. A. Dennis 7, T. J. Moss sur, 150 ft to S and W lines. Lipan Oil Co., Box 823, San Angelo, S. Conner 1, lot 26, Lipan sur (Coke county). Sun Oil Co., Dallas, J. A. Dennis 1, T. J. Moss sur, 160 ft to N and W lines.

Coke County — Lipan Oil Co., Box 823 San Angelo, S. Conner 1, lot 26, Lipan sur, 1320 ft to S and E lines.

Carson County — Marland Oil Co., Fort Worth, Burnett G1; Burnett J1, S 121, B 1, I&GN sur, 660 ft to N and E lines.

Crane County—Stidham & Thrasher, Electra University 1, S 45, B 30, University Lands sur, 360 ft to N and W lines.

Clay County — Western Oil Corp., Brown Bldg., Wichita Falls, T. P. Wyatt 11, B 25, P. C. S. L. sur, 250 ft to E and 75 ft to S line.

Collingsworth County — W. R. Duke, Box

Remember---

"H-E" Fishing Tools

are sold by Supply Stores Everywhere

***The* "H-E" JUMP-OFF SPEAR**

Will save you time, trouble and money. Have one on the job, ready for service.

Can rotate with strain—has more grip—releases at will—no adjustments

Write—Wire—Phone

HOUSTON ENGINEERS, Inc.

P. O. Box 276

HOUSTON, TEXAS

454, Wichita Falls, M. A. Johnson 1, S 97, B 22, H&GN sur, 660 ft to S and W lines.

Eastland County—Texas Co., Wichita Falls, L. A. Hightower 11, B 1, W. Van Norman sur, 300 ft E of No. 10. J. L. Arnold et al, Eastland, H. G. Eppler 1, S 46, B 4, H&TC sur, 660 ft to N and W lines. Moore & Levis, Eastland, J. Lyerla 1, S 27, B 2, H&TC sur, 300 ft to W and 450 ft to S line.

Fort Bend County — Gulf Production Co., Houston, West-Schenck 9, T. Hobermaker sur, 250 ft to W and 50 ft to S line. B. Blakely 9, blk, G. E. Drew sur, 400 ft SE of No. 6. Rycade Oil Corp., Humble Bldg., Houston, D. Flessner 7, T. Allsberry sur, 1865 ft to W and 514 ft to N line.

Garza County — Emerald Oil Co., Winfield, Kansas, S. D. Boren 1, S 137, B 5, H&GN sur, 330 ft to W and 350 ft to N line.

Gray County—Gulf Production Co., Houston, P. A. Worley 9, S 83, B 3, I&GN sur, 660 ft N of No. 3; 8, 660 ft S of No. 5; 7, 660 ft S of No. 4; 6, 660 ft S of No. 2.

Galveston County — Gulf Production Co., Houston, G. E. Smith 1, M. Dunman sur, 300 ft E of No. 6.

Hutchinson County — Gulf Production Co., Fort Worth, E. B. Johnson 18, S 70, B 46, H&TC sur, 740 ft E of No. 12. Phillips Petroleum Corp., Bartlesville, Okla., J. M. Sanford 1, S 82, B 46, H&TC sur, 330 ft to S and E lines. Midwest Exploration Co., Box 308, Whittenburg, Smith-Currie 5, S 5, B Y, M&C sur, center. J. A. Whittenburg 8, S 13, B Y, M&C sur, 330 ft to N and 990 ft to E lines; 7, 1082 ft W of No. 6. Prairie Oil & Gas Co., Ranger, Johnson 44, S 4, B E4, D&SE sur, 135 ft to N and 250 ft to W line; 49, S 22, B Y, A&B sur, 992 ft to N and 160 ft to W line. Golden-Phillips Oil Co., Box 310, Amarillo, T. Hodge 2, S 1A J. C. Patten sur, 400 ft to N and 200 to E line. J. Fronterhouse, 501 Lincoln St., Amarillo, Johnson 1, M. Whitley sur, 470 ft to W and 248 ft to N line; 2, SW corner. Phillips Petroleum Corp., Bartlesville, Okla. Whittenburg 12, S 63, B 46, H&TC sur, 660 ft N of No. 11; 11, 612 ft N of No. 9. L. M. Barnum 4, S 64, B 46, H&TC sur, 690 ft N of No. 1. Prairie Oil & Gas Co., Ranger, Johnson B 13, S 69, B 45, H&TC sur, 990 ft to W and 330 ft to S line. Frank L. Kistler Oil Co., Box 388, Whittenburg, Johnson 4, S 21, B Y, M&C sur, 330 ft to N and W lines.

Hardin County—Acorn Oil Co., Beaumont, Paraffine 64, Knight sur, 310 ft to N and 30 ft to W line. Orane Petroleum Co., Orange, A. Merchant 3, S. Jackson sur, 285 ft to N and 50 ft to E line.

Harris County—Galena Signal Oil Co., Humble, J. B. Stevenson 21A, J. B. Stevenson, south central part of blk 5.

Howard County—Gulf Production Co., Fort Worth, O. Chalk 1, S 94, B 29, W&GN sur, 250 ft to S and W lines.

Jefferson County — Gulf Production Co., Houston, I. R. Bordages 3, M. Bowers sur, 150 ft N of No. 2.

Jim Hogg County—Grayburg Oil Co., San Antonio, Weil 14, No. 81, B 9, 300 ft N of No. 13. K & S Corp., Laredo, R. Holbein 52, S 11, B 22, Las Animas sur, 300 ft S of No. 31; 56, blk 26, 510 ft NE of No. 39. Associated Oil Co., Houston, Martinez 2, No. 1, blk 18, Las Animas sur, 450 ft N of No. 1.

Jackson County—C. A. & G. L. Wright, Edna, J. G. Laughter 1, B. Durbin sur, 820 ft to SW and 180 ft to SE line.

Liberty County—Associated Oil Co., Houston, D. E. Hirshfield 1, William Duncan sur, 50 ft to N and W lines. Gulf Production Co., Houston. W. L. Bingle 1, William Duncan sur, 50 ft to N and W lines. Liberty Bell Oil Co., Beaumont, C. Carp 1, B 5, Town League sur, SE corner.

Milam County — Noack Oil Co., Rockdale, Seelke Heirs 1, T. J. Chambers sur, NE corner. Brady Bros., Minerva, Baldridge 8, T. J. Chambers sur, 300 ft E of No. 3; 9, 300 ft E of No. 6.

Montague County—Empire Gas & Fuel Co., Staley Bldg., Wichita Falls, J. W. Maddox 2, J. Chambliss sur, 150 ft to S and W lines. Comet Petroleum Co., Haleust Bldg., Fort Worth, Roling 1, W. D. Lacey sur, 200 ft to S and W lines. Pure Oil Co., Mexia, J. W. Maddox 6, H. S. Arnold sur. Continental Oil Co., Wichita Falls, J. W. Maddox 12A, C. W. Thompson sur, 670 ft E of No. 11.

Moore County — Phillips Petroleum Co., Bartlesville, Okla., J. T. Sneed 2, D&P sur, 330 ft to center of S line.

Mitchell County—P. C. Teas, Box 507 Colorado, E. T. Stain 1, S 82, B 97, H&TC sur, 990 ft to N and 330 ft to E line. California Co., Colorado, O. Handley 3, S 12, B 28, T&P sur, 330 ft to S and W lines.

Matagorda County — Gulf Production Co., Houston, A. Parkinson 2, Kingston & Powell sur, 2455 ft to W and 510 ft to S line.

Pecos County—California Co., Colorado, Cordova-Union Oil Corp. 1, S 10, B 141, T&StL sur, 900 fe to N and 330 ft to W line. Mid-Kansas Oil & Gas Co., Tulsa, Okla., I. G. Yates 1Ac2, S 61, B 1, I&GN sur, 785 ft to W and 250 ft to S line. Mid-Kansas Oil & Gas Co., Tulsa, Okla., I. G. Yates 1Ac1, S 34½, Texas sur, 535 E of No. 1; 3Ac1, 535 ft W of No. 1; 2Ac1, S 61, B 1, I&GN sur, 785 ft West central.

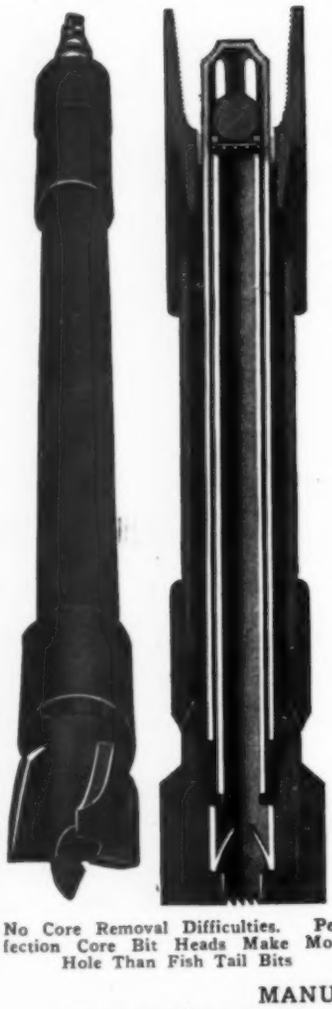
Palo Pinto County—Morris Production Co., Dan Waggoner Bldg., Fort Worth, T. D. Ross 2, S. Townsend sur, 300 ft E and 50 ft N of No. 1.

Refugio County—Houston Oil Co., Houston, W. J. J. Heard 9, Refugio sur, 1014 ft S of No. 9. Houston Gulf Gas Co., Box 1413, Houston, R. Lambert 2, S 2, B 7, 660 ft to S and E lines. Fee 1, S 2, B 6, 660 ft to S and E lines. Fox Estate 2, S 1, B 5, 660 ft to S and W lines. W. L. Rea 2, S 2, B 5, 660 ft to S and W lines.

Reagan County — Big Lake Oil Co., Best, University 113, S 12, B 2, University Lands, 1320 ft W of No. 64; 114, S 13, 1200 ft NW of No. 86; 115, S 25, 1320 ft E of No. 63; 116, S 24, B 9, 800 ft E of No. 11; 117, 800 ft N of No. 11.

Shackelford County—Sedwick Oil Co., Box 1056, Cisco, J. R. Reynolds 6, S 69, L. A. L. sur, 450 ft to S and W lines. Sinclair Oil & Gas Co., Tulsa, J. H. Nail 1, S 104, E. T. Ry

Perfection Core Barrel
100% Perfect Cores



No Core Removal Difficulties. Perfection Core Bit Heads Make More Hole Than Fish Tail Bits

Perfection Core Barrels Are Dependable

We are not asking the Oil Fraternity to experiment. We are offering a perfected core barrel that is now being used by many, who report wonderful results.

Write for detailed description and prices.

Inquiries from North and Western Texas should be addressed to

HERCULES SUPPLY CO., DALLAS, TEXAS

Inquiries from Gulf Coast District should be addressed to

WILSON SUPPLY CO., Houston, Texas

MANUFACTURED BY

Oil City Iron Works, Inc.

MANUFACTURERS OF

Better Oil Field Equipment and Supplies

SHREVEPORT, LA.

sur, center. J. H. Nail 1, S 127, E. T. Ry sur, center. J. H. Nail 1, S 126, E. T. Ry sur, center. S. A. Hopkins, Box 1112, Cisco, J. Kane 1, S 59, University Lands sur, 750 ft to S and W lines. Republic Production Co., Second Natl. Bank Bldg., Houston, E. Meyer 1, S 58, B 1, E. T. Ry sur, 150 ft to N and E lines. White Eagle Oil & Ref. Co., Fort Worth, B. Mathews 1, S 58, E. T. Ry sur, 150 ft to S and W lines. J. Gorscech 1, S 81, B 13, T&P sur, 200 ft to N and 1120 ft to E line. Harwell Bros., Abilene, Z. C. Wagley 5, S 2 D&D Asy sur, 300 ft E of No. 4. J. D. Meredith, Moran, T. E. Powell 4, S 32, University Lands sur, 150 ft to S and E lines. P. S. Kendrick, Albany, Blach B8, 391, TE&L sur, 150 ft to SW and 489 ft to SE line. Milham Corp., Travis Bldg., San Antonio, Z. W. Casey 30, 581, TE&L sur, 300 ft NW of No. 20.

Stephens County—Robert Oil Corp., Breckenridge, A. F. Billman 1, S 458, S. P. Ry sur, 360 ft to W and 490 ft to S line. M. K. Lyman, care Texas Co., Fort Worth, J. Groseclose 1, S 20, L. A. L. sur, 350 ft to W and 330 ft to N line. Sun Oil Co., Dallas, W. E. Carey 8, S 52, B 5, T&P sur, 800 ft W of No. 5. R. B. Pender et al, Denton, J. L. Keel 5, S 6, B 5, T&P sur, 700 ft E of No. 4. Texas Co., Breckenridge, J. W. Parker A44, 3362, TE&L sur, 330 ft to S and W lines. Texas-Fidelity Oil Corp., F. & M. Bank Bldg., Fort Worth, D. C. Pratt 8, S 48, B 6, T&P sur, 500 ft E of No. 7.

Throckmorton County—Humble Oil & Ref.Co., Wichita Falls, S. Langford 1, 987, TE&L sur, 466 ft to S and E lines. Consolidated Oil Co. of Texas, Wichita Falls. E. Conger 2, 943, TE&L sur, 933 ft to N and 1866 ft to W line. Red Bank Oil Co., Castle Bldg., Tulsa, Parrott 4, 971, TE&L sur, 466 ft to N and W lines. Reiter-Foster Oil Corp., Wichita Falls, K. Graham 2, 985, TE&L sur, 200 ft to S and E lines.

Taylor County — Marsten Oil Co., Trent, Winn 1, S 20, B 19, T&P Ry sur, 330 ft to N and W lines.

Upton County — Roxana Petroleum Corp., South Bend, D. Bowen 10, S 6, GC&SF sur, 990 ft to E and 330 ft to S line; 11, 330 ft E and 1650 ft to S line; 12, 330 ft to E and 990 ft to S line.

Wichita County—E. S. Carey, Perkins-Snider Bldg., Wichita Falls, Kemp & Kempner 1, B 62, W. V. F. L. sur, 150 ft to N and E lines. Staley, Wynne & Co., Staley Bldg., Wichita Falls, H. S. Griffin 2, B 6, W. H. Spillers sur. Albright, Brock & Wethers, Iowa Park, W. W. Overby 2, J. M. Sharp sur, 300 ft N of No. 1; e, 300 ft W of No. 1. Gulf Production Co., Fort Worth, C. F. Ancell 1, B 7, H&TC sur, 750 ft to W and 2000 ft to S line. A. T. Wolfe & Son, Staley Bldg., Wichita Falls, A. Daume 5, S. P. Ry sur, 300 ft SE of No. 1. L. G. Oil Co., Iowa Park, J. F. Boyd 6, B 12, B. N. Ferguson sur. Exley & Covert, Box 291, Iowa Park, Birk & George 1, B 23, Douthitt sur, 195 ft to E and 230 ft to S line. John O'Neill, Wichita Falls, J. J. Baker 3, S 29, B 5, H&TC sur, 754 ft to N and 150 ft to E line. Arco Oil Co., Box 1020, Wichita Falls, W. H. Chilson 1, B 4, D. C. S. L. sur, 150 ft to S and W lines. Coppock & Coleman, Box 405, Iowa Park, Kemp & Kempner 6, B 45, W. B. F. L. sur, west of No. 5.

Wilbarger County—Fain-McGaha Oil Corp., Waggoner Bldg., Wichita Falls, W. T. Waggoner 4, S 30, B 9, H&TC sur, 300 ft E of No, 3. Milham Corp., Travis Bldg., San Antonio, W. T. Waggoner 10B, S 42, B 4, H&TC sur, 2550 ft to NW and 1696 ft to NE line. Fain-McGaha Oil Corp., Waggoner Bldg., Wichita Falls, F. Fluhman 5, S 30, B 9, H&TC sur, 300 ft SW of No. 2.

Wheeler County—Piney Oil & Gas Co., Shamrock, J. A. Clark 1B, S 58, B 24, H&GN sur, 330 ft to S and W lines. J. A. Clark 1A, S 58, B 24, H&GN sur, 330 ft to S and W lines. Continental Oil Co., Fort Worth, J. H. Jackson 2, S 11, B 27, H&GN sur, 330 ft to S and E lines. W. C. Compary 2, S 12, B 27, 330 ft to N and W lines. Marland Oil Co., Fort Worth, W. E. Bentley 1, S 42, B 24, H&GN sur, 330 ft to S and W lines.

Wharton County — Gulf Production Co.,

3,000-Bbl. Maloneys, Cosden Pipe Line, Seminole station

MALONEYS SAVE

Time, Worry and Money

They save time (1) because they are quickly obtained from our distributors, and (2) because erection is easy and rapid. They save worry because their patented seam and joint construction and powerfully reinforced seams make them tight and strong. They save money by preventing evaporation loss, and because their material—rust-resisting KeYstone Copper Steel—renders them exceptionally durable.

"Alone in Quality"

Howell Aluminum "3 in 1" Vacuum Pressure Valve and Thief Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety

THE MALONEY TANK MFG. CO.

Tulsa, Oklahoma

MADE OF KEYSTONE COPPER STEEL

Distributors at All Principal Petroleum Points
Sizes 12 to 3,000 Bbls.

Packed in Steel-Bound Crates for Export

MADE OF KEYSTONE COPPER STEEL

MALONEY

Everything *for the oil well*

Machine Tools

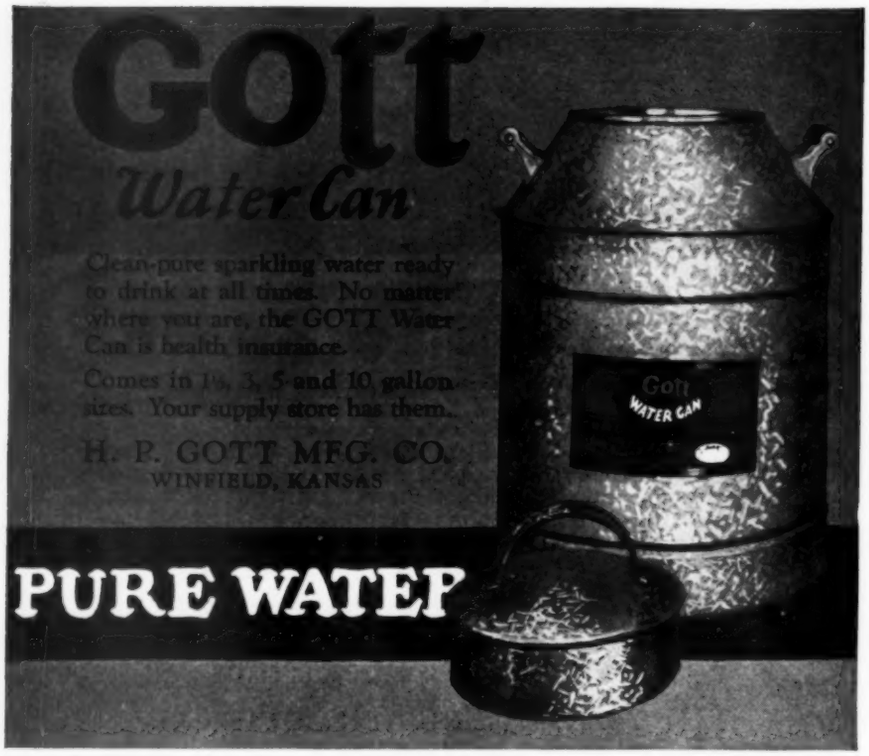
BEAUDRY POWER HAMMERS
AMERICAN LATHES
MONARCH LATHES
AMERICAN RADIAL DRILLS
MILWAUKEE MILLING MACHINES
"LIBBY" TURRET LATHES
WARNER AND SWASEY TURRET LATHE
GRAY PLANERS

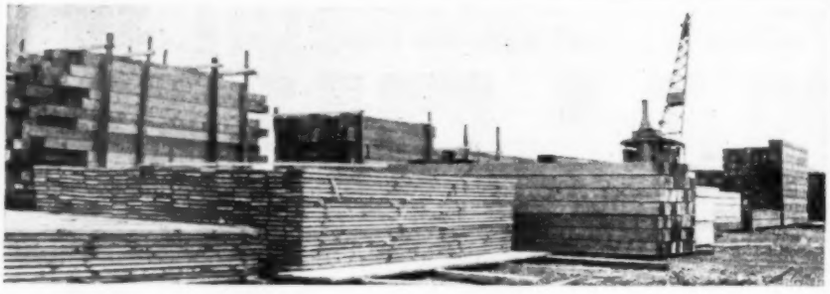
Big stock of Machine Tools and Garage Equipment for quick shipment. Catalogs and full information cheerfully furnished.

THE LARGEST SUPPLY HOUSE IN THE SOUTHWEST

PEDEN IRON & STEEL CO.

HOUSTON – SAN ANTONIO – SHREVEPORT


Gott
Water Can
Clean-pure sparkling water ready to drink at all times. No matter where you are, the GOTT Water Can is health insurance.
Comes in 1½, 3, 5 and 10 gallon sizes. Your supply store has them.
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
Gott
WATER CAN
PURE WATEP



We Have Increased Our Facilities

to serve the oil trade. Our new Oregon Fir Concentration yard in Houston is stocked with Fir LUMBER and Fir TIMBERS brought via Panama Canal.

This enables us to load up to five cars per day of rigs, derricks, foundations, large structural TIMBERS for both cable tool and rotary work. Also we can make combination shipments of Pine and Fir.

We have installed this new Department to SAVE YOU MONEY and IMPROVE OUR SERVICE in straight or mixed cars.

Robertson-MacDonald Lumber Co.

General Offices 1507-08-09 Esperson Bldg. New Offices
HOUSTON, TEXAS.

HARRY A. CAMPBELL F. LEE STEWART

NATIONAL PETROLEUM ENGINEERING COMPANY

ENGINEERS AND GEOLOGISTS

ATLAS LIFE BUILDING

TULSA, OKLAHOMA

APPRAISALS
REPORTS, COMMERCIAL AND TAX

SURVEYS
ESTIMATES OF OIL RESERVES

Houston, W. Banker 2, S. F. Austin sur, 200 ft S of No. 1.

Webb County—Associated Oil Co., Houston, A. M. Bruni 1, S 6, and 7, M. Arispe sur, 450 ft to NE and 500 ft to SE line.

Winkler County—Southern Crude Oil Purchasing Co., Box 1735, Shreveport, La. I. Hendrick A1, S 42, B 5, W. C. S. L. sur, 300 ft to E and 434 ft to S line.

Washington County—C. A. DeWare, Brenham, F. W. Schuerenberg 1, S. M. Williams sur, 200 ft to NW and 159 ft to SW line.

Young County—Tidal Oil Co., W. T. Wargoner Bldg., Fort Worth, S. M. Benson 11, 1451, TE&L sur, 400 ft S of No. 10. R. W. Lindsey Drilling Co., Graham, A. J. Bryan 1, N. Lynch sur, 150 ft to S and E lines. Coons & Hotchkiss, Box 338, Graham, C. W. Johnson sur, 330 ft to W and 384 ft to S line. M. J. Bashara A3, 2920, TE&L sur, 150 ft to N and W lines; A4, 300 ft E of No. 3. Ruthada Oil Co., Liberty Natl. Bank Bldg., Oklahoma City, E. C. Stovall 3, B 31, E. C. Stovall sur, 150 ft to S and W lines. Peery, Moran & Woody, Wichita Falls, G. P. Stewart 2A, D. Dawson sur, 50 ft E of No. 2.

Zapata County—Harlingen Oil & Gas Co., Harlingen, J. M. G. Martinez 2, No. 833 Redondo sur, 300 ft S of No. 1; 3, 300 ft S of No. 2; 4, 300 ft S of No. 3.

Plan Much Drilling For Kevin-Sunburst

Great Falls, Mont.—Authentic reports from the largest operating companies in the Kevin-Sunburst field tend to substantiate the general belief that more wells will be drilled in the field during the present year than during any other similar periods. Cold weather has hampered production, yet the general decline in the field has been more or less alarming. There is ample room in all parts of the field for hundreds of wells. The rumor that the gas pressure has been practically dissipated will be tested by operations planned for the early spring months. It is generally believed that many parts of the field will prove on a par with proven parts, but only the drill will disclose this fact.

Senate Passes Indian Lands Leasing Bill

Washington, D. C.—The issuance of oil and gas permits on Executive order Indian lands is provided for in a bill passed by the Senate February 2. A similar measure is now pending in the House of Representatives, where action will be sought before the adjournment of the session.

The bill passed by the Senate, introduced by Senator Warren of Wyoming, is similar to the measure passed at the last session of Congress and vetoed by the President on the ground that applicants and permittees were not treated alike, but has been amended so as to remove that objection.

Some objection to passage of the bill was raised because of cases now pending before the United States Supreme Court, but it was explained by Senator LaFollette of Wisconsin that the decision of that court in these case will not settle the controversy in regard to applicants who are covered by the measure.

The bill would permit exploration for

oil and gas on the reservations; would give the Indian tribes all the royalties; authorize the States to tax production on the reservations, and extends relief to persons who in good faith expended money in development under the leasing act of 1920. The last named provision is necessary as a result of the controvery arising under an opinion by the Attorney General that the leasing act did not apply to the executive order lands, reversing a decision by the Secretary of the Interior that the lands came under the 1920 law. Twenty permits were granted and applicatinon for a large number were received before the Attorney General rendered his opinion, and several hundred thousand dollars had been expended by permittees.

THE FT. WORTH LABORATORIES

Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Bell Thermometers, Hydrometers and Laboratory Glassware

F. B. Porter, B. S., Ch. E., Pres.
R. H. Fash, B. S., Vice-President
828¼ Monroe St. Ft. Worth, Tex.

SECOND ANNUAL SOUTHWEST ROAD SHOW & SCHOOL
WICHITA, KAN., FEB. 22-25

Road Construction and various Oil Field Equipment will be shown. Oil Field Contractors, Operators especially invited. Reduced rates on all Southwest Railroads.

OIL MAPS—MID-CONTINENT FIELDS
County, State and General Maps
Township Plats — Lease Forms
GALLUP MAP & SUPPLY COMPANY
1320 Walnut St., Kansas City, Mo.

TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

ORIGINAL EOTVOS TORSION BALANCES
Sold and your personnel trained, or rented by the month or by the acre.
DR. GEORGE STEINER
Cotton Exchange Building
Houston, Texas

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

PHILLIP MAVERICK
PETROLEUM GEOLOGIST
Telephone 93
Ricker & Dodson Bldg.
San Angelo, Texas

Maurice Hirsch & Ben J. Brown
ATTORNEYS AT LAW
601-2-3 Goggan Bldg.
HOUSTON, TEXAS
Specializing in Oil Law and Land Law

Representative Wanted

Manufacturer of a well established line, with good demand is interested in securing a representative in the Gulf Coast Section who will work on salary and bonus basis If you are interested, write giving your qualifications, etc., to X-1214, care The OIL WEEKLY, Houston, Texas.

A Salesman Wanted

The man who answers this advertisement will probably have a friend show it to him. He is not now seeking a position.

We require the services of a man to represent us in Texas on the distribution of our gasoline engines. These have a wide range of field applications.

The man we eventually decide on must have the following qualifications:

1. His experience with sales of gasoline and natural gas engines will be a point in favor. Experience in the application of power to oil field equipment is essential.
2. Proven sales ability in selling oil field power.
3. Ability to stay on the track and not sell leases and promote other enterprises as a side line.
4. He must be a proven co-operator with ability to work with a supply house, as well as with all departments of his home office.
5. Unquestioned integrity, as he will be on his own 1200 miles from headquarters.
6. Compensation will be straight salary and expenses.

This is a permanent, bonafide opportunity for the right man, and being a salesman he will convince us of his suitability in his first letter. All information will be held confidential and each letter will receive a reply. Address Salesman, care The OIL WEEKLY.

PATENTS
Patents Obtained, Trade Marks, Patent Causes
JESSE R. STONE
Formerly Assistant Examiner
United States Patent Office
Andrews, Streetman, Logue & Mobley
12th fl. Union N. Bk., Houston, Texas

THOMAS D. LYONS
Attorney at Law
MAYO BUILDING
TULSA, OKLAHOMA

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
406-412 KENNEDY BLDG.,
Tulsa, Okla.
Mr. Ferd Krueger
in Charge
Phone 4-2319

REGISTERED PATENT ATTORNEYS
United States and Canada
Send for blank form
EVIDENCE OF CONCEPTION
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
440 Ouray Bldg. Washington, D. C.

INVENTORS who derive largest profits know and heed certain simple but vital facts BEFORE applying for Patents. Our book PATENT-SENSE gives those facts; FREE. Write
LACEY & LACEY, 715 F. St., Wash. D. C.
Established 1869

Write for my State of Texas oil map free. Oil leases exclusively. Reference: Mercantile Agencies.
C. W. WEBSTER
W. T. Waggoner Bldg.,
Fort Worth, Texas

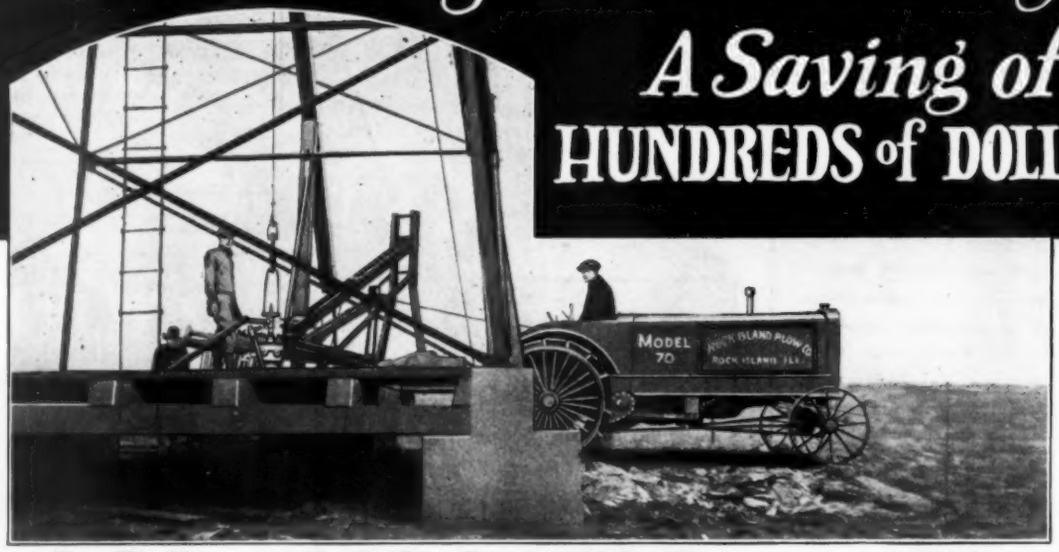
TANKS, PIPE
We Specialize in both, also
Rails, Equipment,
Steel Piling, Heavy Machinery
ZELNICKER IN ST. LOUIS

PANHANDLE OIL MAPS
Complete selection — Texas and Oklahoma Panhandle; and Eastern New Mexico. Write for price list.
ENGINEERING
Amarillo Abstract Co.
106-A W. Fifth St., Amarillo, Texas

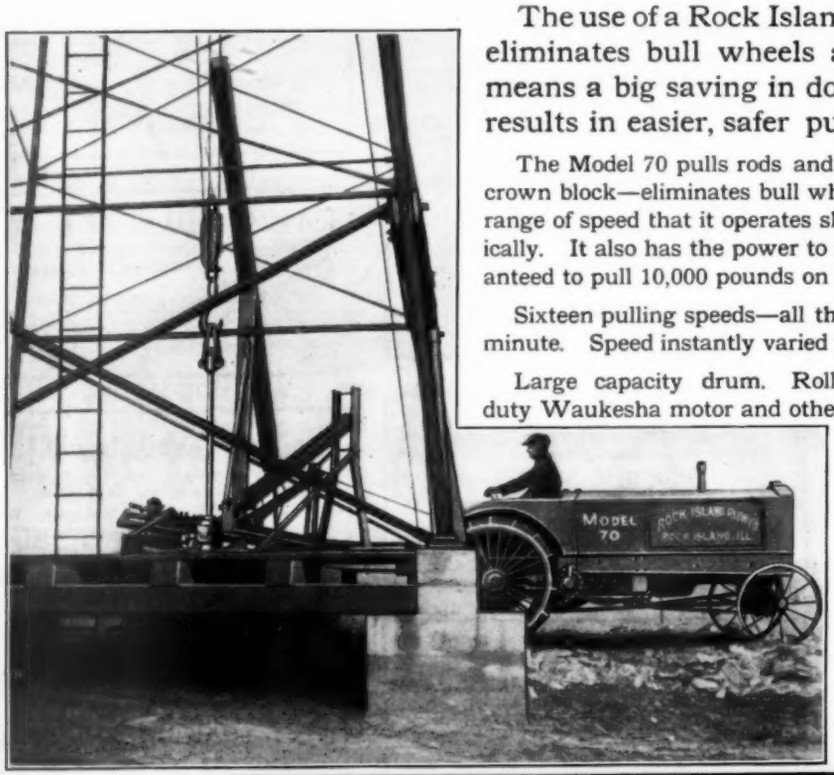
PATENTS
Patents Obtained and Trade Marks and Copyrights Registered
428-29-30 Bankers Mortgage Bldg.
HARDWAY & CATHEY
Phone Preston 4798 Houston, Texas

WANTED:
A production man of at least eight years experience in handling rotary and cable tools as well as production from wells at least 4000 ft. in depth or from Wilcox sand. State in first letter qualifications and salary expected. Personal interview will be granted applicant by appointment only. Box 413, care of The OIL WEEKLY.

No Pony Wheels-No Bull Wheels
When Pulling Rods and Tubing
A Saving of HUNDREDS of DOLLARS



Rock Island Model 70 Tractor Winch



The use of a Rock Island Model 70 Tractor Winch eliminates bull wheels and pony wheels, which means a big saving in dollars and cents, and also results in easier, safer pulling of rods and tubing.

The Model 70 pulls rods and tubing from drum directly over crown block—eliminates bull wheels entirely. It has such a wide range of speed that it operates shallow wells rapidly and economically. It also has the power to operate the deepest wells. Guaranteed to pull 10,000 pounds on a direct line.

Sixteen pulling speeds—all the way from 100 to 450 feet per minute. Speed instantly varied while in action.

Large capacity drum. Roller-bearing friction clutch, heavy duty Waukesha motor and other features make the Rock Island Model 70 cut the cost of pulling rods and tubing.

SOLD BY

C. F. Camp Company
Distributors
Corner Archer & Detroit
TULSA, OKLA.

MANUFACTURED BY

Rock Island Plow Company

ROCK ISLAND, ILLINOIS.